

# FAAM facility for airborne atmospheric measurements

## FLIGHT FOLDER



Flight No.	B397	
Date:	22 Aug 2008	
Take Off:	07:30:40Z	13:42:01Z
Landing:	12:06:34Z	18:16:36Z
Flight Time	4h 35m 54s	4h 34m 35s

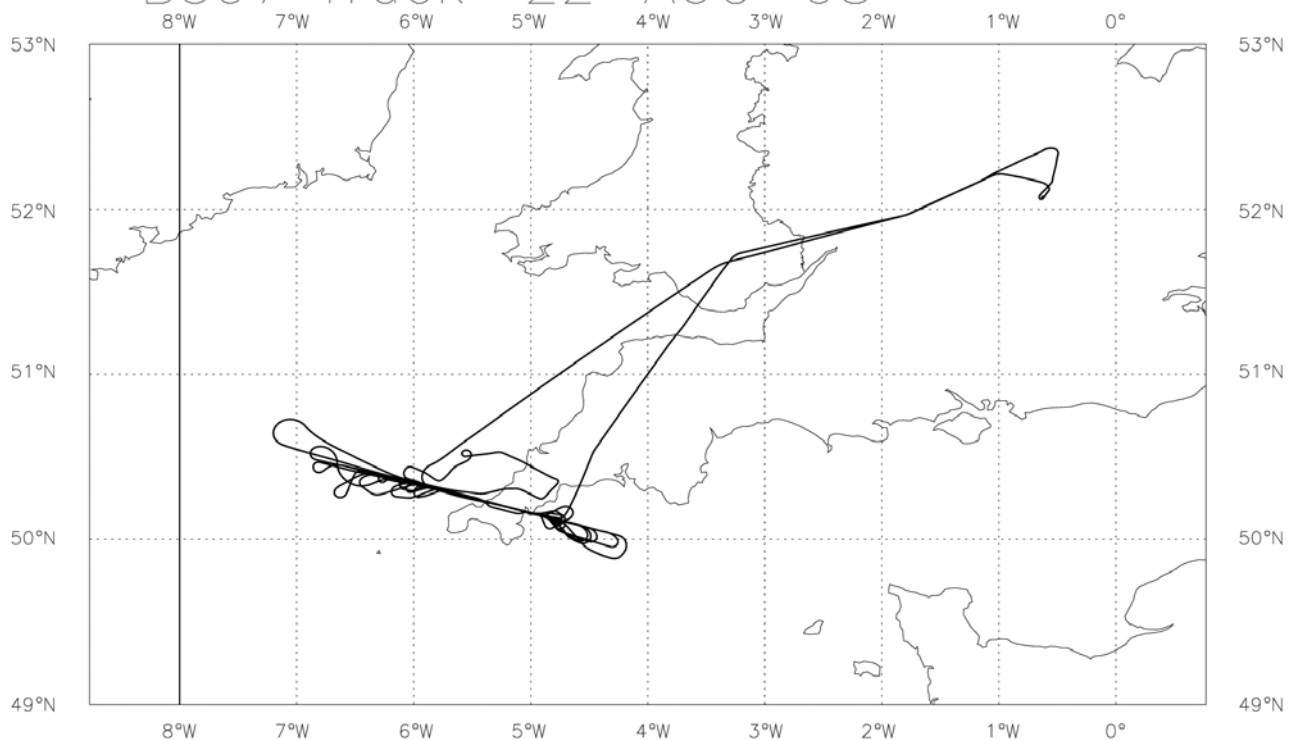
**Campaign:** CAVIAR

**Operating Area:** Camborne

POB	Position	Name	Institute	Logs y/n
1	Captain	Luc Lathouwers	Directflight	
2	Co-pilot	Alan Foster	Directflight	
3	CCM1	Sue Angold	Directflight	
4	Mission Scientist	Dave Pollard	Met Office	y
5	Flight Manager	Mo Smith	FAAM	Y
6	Cloud Physics / AVAPS Training / CCM2	Kate Turnbull	FAAM	Y
7	AVAPS	Steve Devereau	FAAM	Y
8	ARIES / MARSS / DEIMOS	Stuart Newman	Met Office	N/y
9	SWS / SHIMS	Martin Glew	Met Office	Y
10	CVI / FWVS	Jeff Norwood-Brown	Met Office	N
11	TAFTS 1	Paul Green	Imperial College	N
12	TAFTS 2	Ralph Beeby	Imperial College	N
13				
14				
15				
16				
17				
18				

### Flight Track:

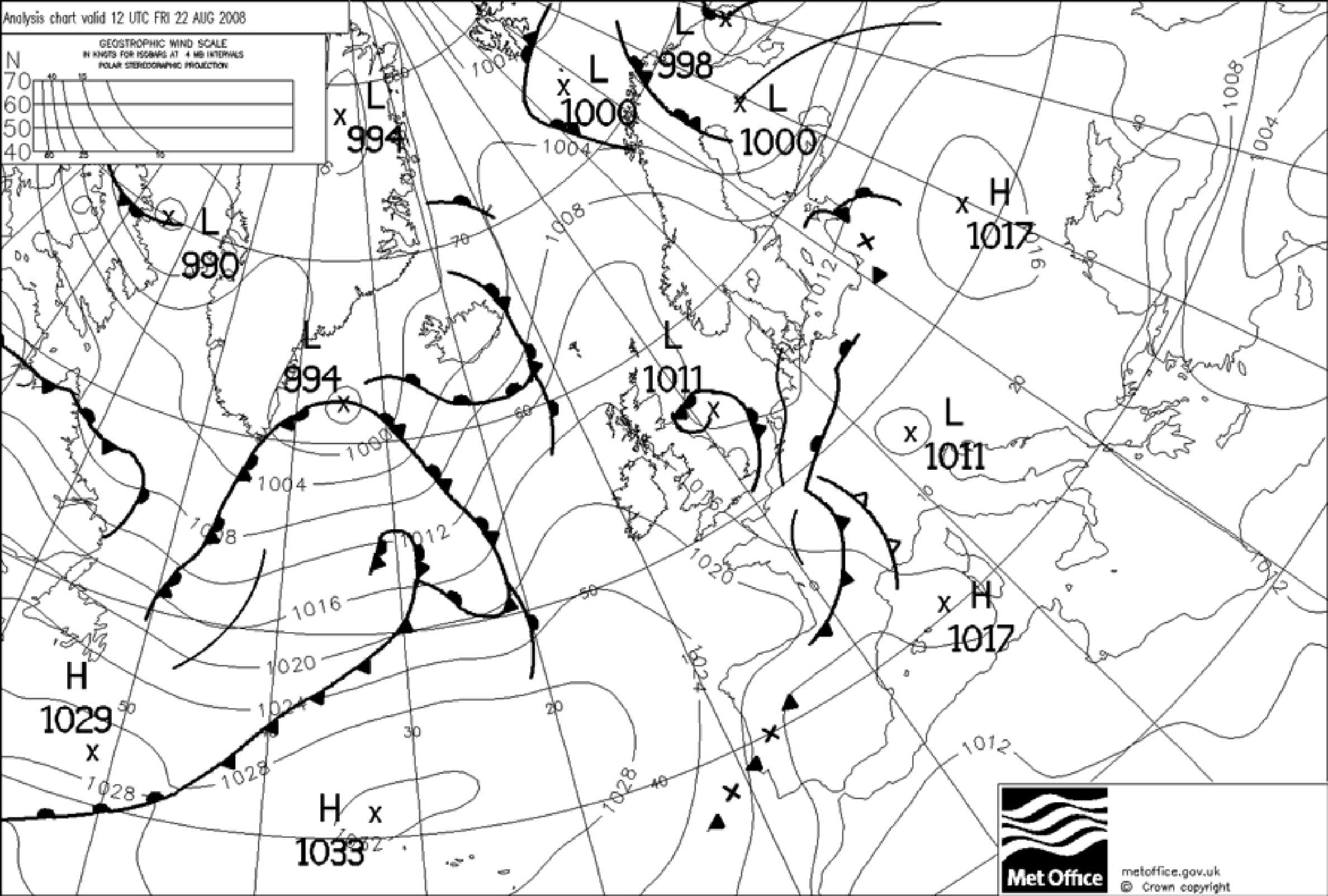
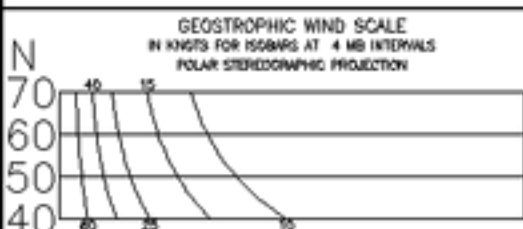
B397 Track 22-AUG-08

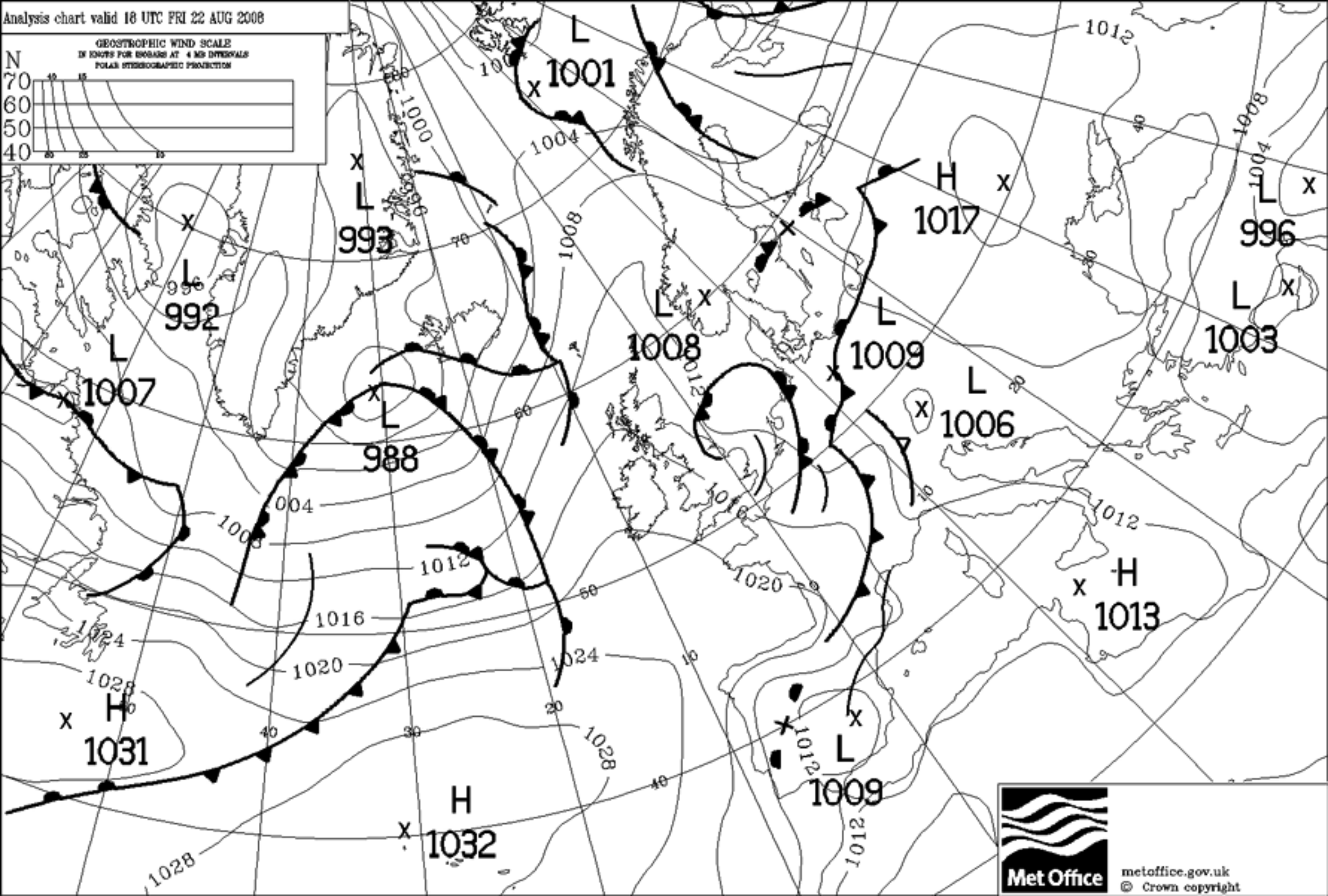


# FLIGHT SUMMARY

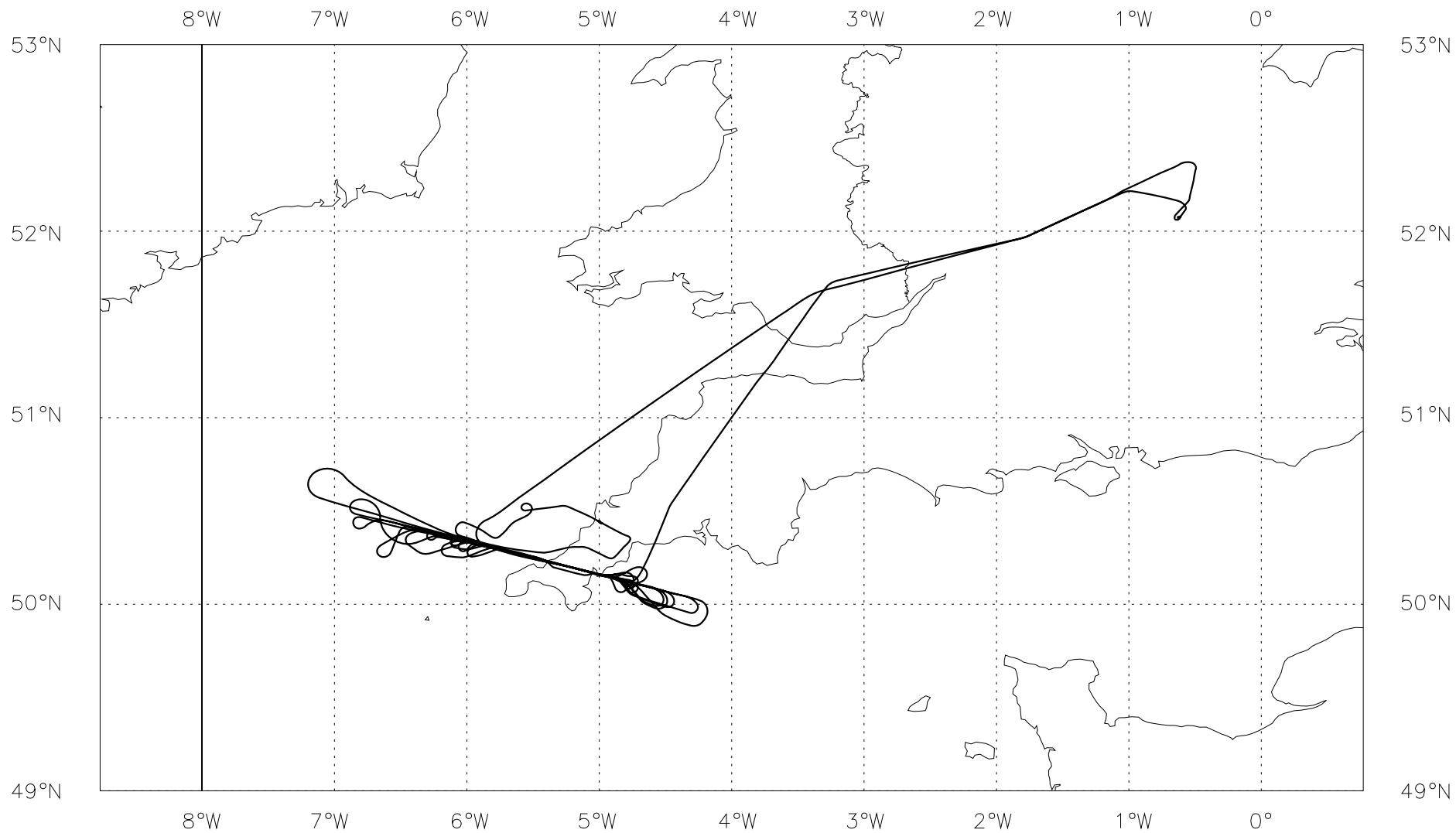
Flight No B397  
Date: 22 August 2008  
Project: CAVIAR  
Location: Camborne

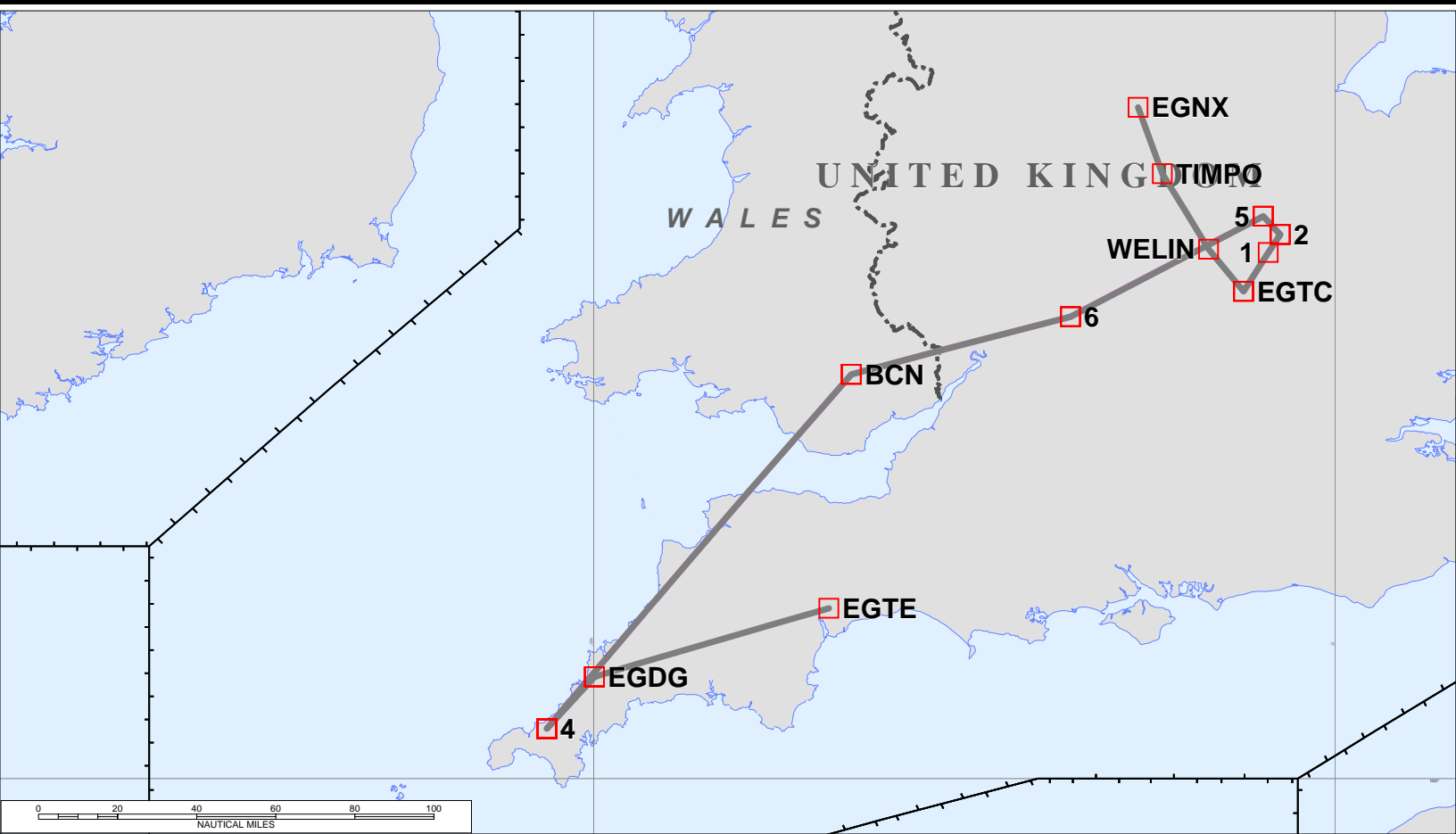
Start Time	End Time	Event	Height (s)	Hdg	Comments
----	----	-----	-----	---	-----
071050		Start-Up	0.30 kft	001	
072541		ASP	0.29 kft	054	
073157		T/O	1.6 kft	036	
073949		JW, Nevz	10.0 kft	243	
080027		Video	20.0 kft	220	
080841		Nevz	20.0 kft	219	
082006	083008	Run 1	20.1 - 20.0 kft	291	
082027		Sonde	20.0 kft	297	
082526		Sonde	20.0 kft	288	
083708	084713	Run 2	15.0 kft	096	
083720		Sonde	15.0 kft	099	
084221		Sonde	15.0 kft	102	
085210	090212	Run 3	10.0 kft	302	
085705		Event	10.0 kft	289	
090658	091700	Run 4	6.0 kft	098	
091110		Event	6.0 kft	103	
091400		Event	6.0 kft	103	
092218	093219	Run 5	4.0 kft	289	
092744		Event	4.0 kft	286	
093611	093820	Profile 1	2.0 - 0.77 kft	285	
093839	093917	Profile 1	0.60 - 0.46 kft	274	
093955	094102	Profile 1	0.38 - -.11 kft	096	
094102	094718	Run 6	-.11 - -.06 kft	101	
094219		Heimann	-.07 kft	103	
094725	095016	Profile 2	-.04 - 2.5 kft	099	
095017	095507	Run 7	2.5 kft	101	
095926	100926	Run 8	3.5 kft	278	
100151		Event	3.5 kft	260	
100458		Event	3.5 kft	288	
101502	102706	Run 9	7.5 - 9.3 kft	082	
102147		Ovhd	7.5 kft	102	
103509	104509	Run 10	15.0 kft	288	
104148		Sonde	15.0 kft	288	
105749	110751	Run 11	25.0 kft	098	
105848		Sonde	25.0 kft	102	
110429		Sonde	25.0 kft	102	
111809	112916	Run 12	32.0 kft	288	
112623		Sonde	32.0 kft	295	
112857		Sonde	32.0 kft	294	
113006	120059	Profile	32.0 - 2.4 kft	293	
120307	120710	Profile 3	2.5 - 0.20 kft	299	
120725		Land	0.20 kft	301	
120904		ASP	0.17 kft	066	
121119		Refuel	0.17 kft	340	





# B397 Track 22-AUG-08





**CAVIAR water vapour continuum flight B397 (double flight)**  
**22 August 2008**

**Take off Cranfield:** 0830L (0730Z)  
**Land St Mawgan:** 1300L (1200Z)  
**Take off St Mawgan:** 1430L (1330Z)  
**Land Cranfield:** 1930L (1830Z)

**Location:** Cornish peninsula in vicinity of Camborne radiosonde station. Straight and level runs should be conducted partially over sea and partially over land, intercepting the location of the ground station during the run.

**Weather conditions:** Clear sky (or very nearly clear sky) from surface to space

**Important instruments:** ARIES, TAFTS, SWS, MARSS, DEIMOS, AVAPS, all water vapour instruments, core chemistry, PCASP

**Sortie aim:** to sample intensively the water vapour structure of the atmosphere in the area around Camborne, and measure the radiative signature of the water vapour continuum.

**Coordinates:** aim to fly straight and level runs between coordinates

A = 50.08°N, 4.51°W (Southeast point)

B = °N, °W (Northwest point, variable with TAS)

The runs are nominally of 10 mins duration, but in practice these will be of longer (shorter) duration at minimum (maximum) altitude.

**Radiometers:** ARIES and TAFTS to coordinate their upward and downward views during the straight and level runs.

**Note** that the exact selection of flight altitudes will be made by the mission scientist, depending on the humidity structure of the atmosphere for each flight. In general, it is most useful to concentrate flight levels where the humidity is highest.

**Camborne radiosonde ascents:** extra balloon launches have been requested for **0915Z and 1600Z**. Communications between the aircraft and the ground will be made via satellite phone.

## Sortie items – flight levels are examples only

### Flight A

1. Take off from Cranfield **0730Z** and transit to area of operations around Camborne. Arrive at intermediate altitude conducive to fuel economy, e.g. FL200. (45 min)
2. Perform straight and level run (SLR) at FL200 between A and B, dropping two sondes (10 mins, 57 total)
3. Descend in the turn to FL150, rate of descent 1000 ft/min (7 mins, 64 total)
4. Perform SLR (B to A) at FL150, dropping two sondes (10 mins, 74 total)
5. Descend in the turn to FL100, rate of descent 1000 ft/min (7 mins, 81 total)
6. Perform SLR (A to B) at FL100 (10 mins, 91 total)
7. Descend in the turn to FL075, rate of descent 1000 ft/min (7 mins, 98 total)
8. Perform SLR (B to A) at FL075 (10 mins, 108 total) **Radiosonde balloon launch around this time (0915Z)**
9. Descend in the turn to FL050, rate of descent 1000 ft/min (7 mins, 115 total)
10. Perform SLR (A to B) at FL050 (10 mins, 125 total)
11. Step profile from B down to 50 feet over ocean, finishing at B, rate of descent 500 ft/min (12 mins, 137 total)
12. Perform SLR (B to A) at 100 feet, ascending at 1000 ft/min on approach to coast to reach minimum safety altitude (MSA) and continuing run at MSA for rest of run (10 mins, 147 total)
13. Ascend in the turn to FL035, rate of ascent 500 ft/min (7 mins, 154 total)
14. Perform SLR (A to B) at FL035 (10 mins, 164 total)
15. Ascend in the turn to FL065, rate of ascent 500 ft/min (7 mins, 171 total)
16. Perform SLR (B to A) at FL065 (10 mins, 181 total)
17. Ascend in the turn to FL100, rate of ascent 1000 ft/min (7 mins, 188 total)
18. Perform SLR (A to B) at FL100 (10 mins, 198 total)
19. Ascend in the turn to FL200, rate of ascent 1000 ft/min (12 mins, 210 total)
20. Perform SLR (B to A) at FL200, dropping two sondes (10 mins, 220 total)
21. Ascend in the turn to FL320, rate of ascent 1000 ft/min (15 mins, 235 total)
22. Perform SLR (A to B) at FL320, dropping two sondes (10 mins, 245 total)
23. Perform stepped profile descent from FL320, ending with landing at St Mawgan (35 mins, 280 total)

### Flight B

24. Take off from St Mawgan, transit at low level to arrive at point B at 50 feet (10 mins)
25. Perform SLR (B to A) at 100 feet, ascending at 1000 ft/min on approach to coast to reach minimum safety altitude (MSA) and continuing run at MSA for rest of run (10 mins, 20 total)
26. Ascend in the turn to FL035, rate of ascent 500 ft/min (7 mins, 27 total)
27. Perform SLR (A to B) at FL035 (10 mins, 37 total)
28. Ascend in the turn to FL065, rate of ascent 500 ft/min (7 mins, 44 total)
29. Perform SLR (B to A) at FL065 (10 mins, 54 total)
30. Ascend in the turn to FL100, rate of ascent 1000 ft/min (7 mins, 61 total)
31. Perform SLR (A to B) at FL100 (10 mins, 71 total)
32. Ascend in the turn to FL150, rate of ascent 1000 ft/min (7 mins, 78 total)



33. Perform SLR (B to A) at FL150, dropping two sondes (10 mins, 88 total)
34. Ascend in the turn to FL200, rate of ascent 1000 ft/min (7 mins, 95 total)
35. Perform SLR (A to B) at FL200, dropping two sondes (10 mins, 105 total)
36. Ascend in the turn to FL260, rate of ascent 1000 ft/min (8 mins, 113 total)
37. Perform SLR (B to A) at FL260, dropping two sondes (10 mins, 123 total)
38. Ascend in the turn to FL320, rate of ascent 1000 ft/min (10 mins, 133 total)
39. Perform SLR (A to B) at FL320, dropping two sondes (10 mins, 143 total)
- Radiosonde balloon launch around this time (1600Z)**
40. Profile descent from FL320 to terminate at 50 feet at point B (40 mins, 183 total)
41. Perform SLR (B to A) at 100 feet, ascending at 1000 ft/min on approach to coast to reach minimum safety altitude (MSA) and continuing run at MSA for rest of run (10 mins, 193 total)
42. Ascend in the turn to FL050, rate of ascent 500 ft/min (12 mins, 205 total)
43. Perform SLR (A to B) at FL050 (10 mins, 215 total)
44. Ascend in the turn to FL100, rate of ascent 1000 ft/min (7 mins, 222 total)
45. Perform SLR (B to A) at FL100 (10 mins, 232 total)
46. Ascend in the turn to FL200, rate of ascent 1000 ft/min (12 mins, 244 total)
47. Perform SLR (A to B) at FL200, dropping two sondes (10 mins, 254 total)
48. End of science; transit back to Cranfield (45 mins, total sortie time 299 mins)

Mission Scientist's Debrief: B397 – 22<sup>nd</sup> August 2008  
David Pollard

B397 was a double Caviar sortie, conducted over the Camborne upper air station, with a refuel at St Mawgan between sorties.

The meteorological situation was a north westerly flow over the Cornish peninsula containing patches of St. The airmass was unstable to land surface temperatures over the peninsula causing Cu convection to the south west of Camborne.

The sortie was conducted at various levels on a track originating at a point A, situated at 50.08N, 4.51W, and extending NW, over Camborne to give a run time of approximately 10 mins, to end at a nominal position B.

Flight A:

On arrival at point A at 08:20, the area was under nearly 8/8 St with some wispy bits of Ci above. A run from A to B was performed, dropping 2 sondes. Towards the NW end of the run, clearer skies were seen. This was followed by runs at FL150 (B-A), FL100 (A-B), FL60 (B-A), FL40 (A-B) and a profile down to 50 ft before running into the coast at 100 ft, climbing to 2500ft to cross the coast and continue to A. During these runs, there were two patches of St at ~6000 ft, one just off the coast to the NW and one over land, starting just to the E of Camborne. Below this sheet over the peninsula there was some (~4/8) convective Cu. During the course of the runs, the St seemed to burn off, and none could be observed during the low level run.



*Photo 1 Inbound from point B at FL60 (R4) St coast, Cu below.*

This was followed by a series of runs at FL35 (A-B), FL75 (B-A), FL150 (A-B, 1 sonde), FL250 (B-A, 1 sonde) and FL320 (A-B, 2 sondes) and a deep profile ending on the ground at St Mawgan. Throughout these manoeuvres, the skies remained clear of St over land, with the convective activity subsiding slightly. A sheet of St did advect towards us from S. Ireland, but seemed to dissipate as it approached. Core chemistry reported high concentrations of O<sub>3</sub> at the top of the profile descent.

Flight B:

After a refuel at St Mawgan, the aircraft took off and transited to point B, arriving at 50 ft, and conducting a run at 100 ft towards the coast before climbing to 2500 ft to cross the coast line, followed by runs at FL35 (A-B), FL75 (B-A), FL140 (A-B), FL200 (B-A, 2 sondes), FL260 (A-B, 2 sondes) and FL320 (B-A, 2 sondes). This was followed by a deep profile descent to 50 ft, and a run from B to A at 100 ft over ocean and 2500 ft over land. During the ascent and descent, some structure was observed in the humidity profile, including a particularly dry layer at ~FL200 – FL250.

Runs were then carried out at FL50 (A-B), FL100 (B-A) and FL200 (A-B, 2 sondes). Generally, throughout the second sortie, the convective activity was dying out, so that towards the end of the flight there was an estimated 2/8 Cu over the land, with bases below 2500 ft and tops around 5000 ft.

# Mission Scientist's Log

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Flight No **B397** Date 22/8/8 Name Pollard Page 1 of 7

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
7:31:57					T/O
7:40:-					CVI had Harver problems & PCASP req. restart
					Moist ascent from ESTC
					drying as head W.
7:51					PCASP working again after 2 reports
08:02					Area appears clear apart from a few Ci and thin Ci
8:08					<sup>inc</sup> <del>drop</del> in Oz w/ conc drop CO
8:10					Ci above area appears well broken
					Low lev clld fairly well covered fairly thin St/sc
08:20:06	R1	FL200	295	1A	A-B
08:20:27					Sonde 1
					Some wisps of Ci above track 8/8 st below
					Some convector to NE
					Clearer cond's to N
08:25:26					Sonde 2
08:28					Clearing a bit below, ~ 3/8 decreasing
08:30:08	R1				End
					descend in turn to FL150

# Mission Scientist's Log

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Flight No **B.397** Date 22/8/0 Name Pollard Page 2 of 7

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
08:35					moist layer ab r 12.5kft
08:37:20	K2	FL150	98	B	B-A
08:37:20					Sonde 3
					Fairly clear below, then short st sheet before coast, gpp, more ext st sheet
					Still conv to NE 
08:42:20					Sonde 2
08:47:13	K2			Start of A	End 1/4 Sc this end
8:52:10	K3	FL100	292		
9:02:12	K3				End
		Didn't see much of clouds during that run			next run FL60 based on Sonde
9:06:59	K4	FL60	104	B	Clear below and to SW
					Conv just to NE (Photo 2)
					Some conv. capped by st/sc just inland (Photo 1)
9:10					Just sneaking above / skimming thru small st deck
					
09:13					Crossing st boundary
09:16					Penetrating car tops punching through st

# Mission Scientist's Log

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Flight No **B.397** Date 22/4/19 Name Pollard Page 3 of 7

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
9:17:00	R4			1A	End
9:22:19	R5	FL40	298	1A	<del>AV A-D</del> 
9:22					Starting run in and out of Cu
					out of Cu, it slopes down
					tow wds Comb
					Clearing after coast
9:28:30					Coasting out, clear skies
09:32:18	R5		286		End, bit of Cu around here
	P1	FL40 → 500ft			extending beyond
9:36					exiting Cu clear skies
9:39:12		500ft			P1 interrupt
9:39:55					Resume P1
9:41:02	P1	500ft			End
9:41:50	R6	1000ft	102		Under clear skies
9:42:35					Passing under some Cu
9:45					under ~ 2-3/8 Cu
9:47:18	R6/P2	1000ft → 2500ft			clearing Cu
9:50					into Cu over Cu when coasting
9:50:17	P2/R7	2500ft			
9:50:50					into Cu
					Seem to have lost the circle
					St Layer
9:55:07	R7	FL25		1A	end

# Mission Scientist's Log

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Flight No **B.397** Date 22/8/8 Name Pollard Page 4 of 7

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
9:59:26	R8	FL75	286	A	
10:02					Turn for traffic override
10:04					Cu pulling away again
10:15:02	R9	F75	92	B → A	Clear, < 1/8 Cu over sea
					~ 4-5/8 over land, no St
					Clear above
10:19					Good conv capped just below
					this level to N/E
					and kicking off over land
10:25:-	R9	FL75		A	End, above Cu tops this level
10:35:09	R10	FL150	288	A	A-B
					Cu seems to be thinning out
					Small patch of St to N of
					track over sea
10:41:48					Sonde 5 - should drop thru
					clear air
10:45:09	R10	FL150		B	End of R run
10:57:49	R11	FL250	103	B	B-B set Cu below < 1/8
					still have conv over land
10:58:45					Sonde 6
11:07:51	R11				End
11:18:09	R12	FL320	289	A	
11:26:35	RK				Sonde 7
11:28:57	R12	end			8 Hi Oz air ab
					top of drag

JRR 01234 75 4864

# Mission Scientist's Log

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Flight No **B.397** Date 22/8/8 Name P. Ward Page 5 of 7

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
13:42:53					T/O on 2nd flight
					Orbit to allow for belts
13:51					~ 1/8 Cu over sea
13:51:30					descending to 50ft
14:00:52	R13	50ft			
		100ft	111	B	B-A @ 100ft ind
					< 1/8 Cu nil obs
14:05:57	R13 / R14	100ft			climbing and
					Cu looking less vigorous over land
14:08:36	R4 / R14	FL25			
14:09:25					into (much smaller Cu
14:11:50					about level w/ Cu bases here
14:13:28	R14				
14:17:38	15	FL35			A-B starting in Cu
14:21:10					approaching Cu tops above's end
14:22:00					Shies quite clear this side
					of peninsular
14:25					Some Cu just off coast
14:27:42	15	FL35		B	end
14:32:37	16	FL75	106	B	B-A
					Seem to be in quite a dry flow
14:42:57	16			A	End
					Good dry slot in clouds



# Mission Scientist's Log

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Flight No **B.397** Date 22/8/9 Name Alfred Page 6 of 7

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
14:50					less com to N of track
					quite vigorous to S
14:51:16	17	FL140	289	A	
15:01:13	17	FL140			Climbing to <del>FL</del> 200
15:07:43	18	FL200	107	B	start and Sonde 10
15:10:27					Sonde 11
15:16:27	18				End
					climbing to 260
15:22		FL250			in quite a dry slot
15:24:32	19	FL260	293	A	
15:28:27					Sonde 12
15:34:01					Sonde 13
15:34:44	19				End
15:48:44	20	FL320	94	B	Start 13-14 & Sonde 14
					Quite a bit of com
					to S & W
15:54:25					Sonde 15
15:57:39	20				End
15:58:10	<del>FL320</del> FL320				→ 50 ft
16:05					Convective over land seems to be dying down a bit
					Couple of <del>big</del> patches of St clouds
16:09	<del>FL</del>	FL200			going through dry slot that wasn't there before

# Mission Scientist's Log

DigiMemo e-Page .....

Flight No **B397** Date 22/8/9 Name Pollaro Page 7 of 7

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
16:10		FL183			moist layer
16:23					Clear plus VLOS noisy
		FL25			level w/ some Cu tops
16:27					Coming under St
		1000ft			change of Rdn to 500ft/min
16:28:19					Raining briefly
16:29:53	19	50ft			
16:30:02	21	100ft			under thinning St
16:34:50	21/pc	100ft	103		under clear sky now
16:35:50		1800ft			through a little cloud
16:37:35	16/22	2500ft			Some Cu about
16:37:50					into Cu
16:41:56	22				End climbing to FL50
16:46:00	23	FL50	285	A	A-B seem to be above most Cu
					(at this level) } Generally about
16:56:09	23	FL250			End } 1/4 - 2/4 Cu
17:02:11	24	FL180	103	B	B-A } overlaid at this
17:12:07	24				end } point
17:22:52	25	FL200	290		Start, in quite a dry slot
					Some layers of polut <sup>n</sup> this level
17:29:43					Sonde 16
17:34:53	28				Sonde 17
					End of run, end of science

# Aircraft Scientist's Log

TEST FLIGHT. MISSION SCIENTIST: STUART NEWMAN

Flight No **B.394**...

Date **13/8/2008**...

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GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
1003		FL100			In cloud on ascent
100543	R1.1	FL100			196 knots run (min. speed)
100750	end R1.1	"	242	52° 1.0W	Acc. to "average" speed
100905	R1.2	"	245	52° 1.6W	240 knots run, still in cloud
	end R1.2	"	243	52° 1.24W	Acc. to max. speed
101247	R1.3	"	243	52° N 1° 30W	290 knots
101456	end R1.3	"	250	53° 4, 1° 48W	Climb, clearance between cloud layers
1020		FL180	254	59° 48, 2° 24W	Above messy CuSc below, some high cloud above
	P1	FL180 ↓	234		Profile descent, in clear air, CuSc below
1042		5500'			Entering tops of Sc
104249	R2.1	5000'	238	51° N 4° 30' W	Largely within Sc, breaks in places
1045	"	"			Raining... CVI and 2D probes sensing water droplets
1050	"	"			Quite heavy precipitation
1100	"	"	327	51° 24', 5° 42W	Consistent precip on this run
110857	end R2.1				
110511	R2.2	5000'	209	51° 24, 5° 34W	Acceleration and deceleration legs with flap, angle of attack variation
					These runs in cloud, some precip.
					110750 min. speed ~ 130 knots
					111000 max speed ~ 250 knots
					<del>111045</del> 111045 in clear slot, raining
					111157 min speed ~ 130 knots
111550	—	5000'	202	50° 48, 6° W	In thin Sc layer, patchy, multi-layered
					Intermittently in and out of cloud
112030					SID-2 seems to have failed
1124					Definitely clearing, patchy Cu rather than Sc.
112640	P2	5000' ↓			Profile down "until captain gets nervous"

with heavy swell and whitecaps/breaking waves



# Aircraft Scientist's Log

Flight No **B.394**.....  
FAAM © 2004

Date **13/8/08**.....

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GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
1128	P2 cont.	4000' ↓	248	50°12', 6°48'W	Continuing descent to sea surface, passing through scraps of cloud
113330	"	1600'	252		PCASP conc 180 c.f. CVI at 100
113652					End profile at 100'
113658	P3	100' ↑		50°6', 7°30'W	PCASP max 400, typically 250, wet neph reports sea salt, hydrated scattering increase
114430	"	5000'	turn.		Rate of climb incr. to 1000' min <sup>-1</sup>
114720	R3.1	8000'	207	50°12', 6°54'W	Run just above tops of of Cu/Sc, looks pretty clear above
115731	End R3.1	"			By altering heading kept clear skies above at all times
115850	P4	8000' ↑	045	50°0', 7°30'	
122129	End P4	FL280		50°30', 7°24'W	Looks pretty clear above, still Cu/Sc below
122230	R4.1	FL280	187	50°30', 7°24'W	Heading S, west of Cornwall over ocean
123231	End R4.1	"			AGAINST WIND
	R4.2	FL280	004		Reciprocal run WITH WIND
124431	End R4.2	"			Scattered Cu below, clear above
124538	S.1	FL280	093	50°30', 7°6'	Box pattern - cross sun run solar azimuth 184°
125005					FFSSP disk failure reported
125143	S.2	FL280	184	50°24', 6°24'W	Into sun run
1252					Little bit of Ci going over top of us
1253					Now clear above, Cu/Sc with breaks below
125644	End R5.2				
125748	R5.3	FL280	277	50°0' 6°36'W	Across sun run
	R5.4	FL280	012	50°6', 7°12'W	Away from sun run, Cu below, clear above
1307					TAFIS laser no longer working
130922					Yawing manoeuvres oscillation
131230					Coming into cloud



## Aircraft Scientist's Log

Flight No **B.394**.....  
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Date 13/8/08

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[illegible]

CLOUD PHYSICS LOG Flight B397

Date: 22/08/08	Operator: KFT	DRS Time: 05:35:00	DAU1 Time: +0	DAU2 Time: +0	DAU3 Time:	Aux1 Time:	Aux2 Time:	Page 1 of 3
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G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
				PCASP, 2DC, FFSSP operated. SID2 U/S, SID1, 2DP, CIPs not fitted													
07:10																	Probes started logging
07:32																	Heaters on
07:32:57	246	0.09	4			0											FL030
07:33:37	111	0.09	5			0											FL040
07:34:00	171	0.09	5			0											FL050
07:34:35	74	0.10	5			0											FL060
07:35:21	197	0.09	5			0											FL070
07:37:24	62	0.27	79			0											FL090
07:38:03	21	0.09	83			0											FL100
07:40:00	25	0.08	83			0											
09:16:30	163	0.10	217			15	?									?	In SCu layer
09:21:11	332	0.09	424			0											Just below SCu layer
09:22:23	330	0.10	435			0											Start R5 FL040
09:25:00	280	0.10	546			1	400									1	In cloud
09:27:00	251	0.10	796			0											Out of cloud
09:30:00	210	0.10	799			0											Out of cloud
09:32:19	210	0.09	800			0											End R5
09:36:07	695	0.17	825			0											FL020
09:36:55	297	0.10	832			0											FL015
09:37:58	416	0.09	833			0											FL010
09:39:34	469	0.08	834			0											500FT ASL
09:41:01	416	0.09	835			0											50FT ASL
09:45:00	432	0.09	839			0											R6 100FT ASL
09:46:18	311	0.10	842			0											END R6
09:48:34	263	0.09	844			0											FL010
09:49:25	120	0.09	845			0											FL020
09:50:17	258	0.09	846			0											FL025 START R7 OVER CAMBORNE
09:52:00	418	0.09	1048			0											SCT SCu
09:55:09	366	0.09	1148			0											END R7
09:59:26	264	0.09	1151			0											START R8 FL035
10:02:30	376	0.10	1296			0											
10:05:00	207	0.09	1399			0											1.5MILES S CAMBORNE
10:09:34	244	0.10	1403			0											END R8 START PROFILE
10:10:23	184	0.09	1404			0											FL040
10:11:25	138	0.09	1405			0											FL050
10:12:25	92	0.09	1406			0											FL060
10:15							NOISE										

PCASP Reference Volts = 7.6	FFSSP Reference Volts =3.1	2D2-C End element 1 voltage = 1.3	CIP25 End element 1 voltage = N/A	CIP100 End element 1 voltage = N/A
PCASP Flow rate = 0.85		2D2-C End element 32 voltage = 1.2	CIP25 End element 64 voltage =	CIP100 End element 64 voltage =
© Met Office 2007	SID2 Laser power = N/A	2D2-P End element 1 voltage = N/A		

CLOUD PHYSICS LOG Flight B397

Date: 22/08/08	Operator: KFT	DRS Time: 05:35:00	DAU1 Time: +0	DAU2 Time: +0	DAU3 Time:	Aux1 Time:	Aux2 Time:	Page 2 of 3
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G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
10:25:51	25	0.10	1422				NOISE										FL080
10:26:56	42	0.08	1423				0										FL090
10:27:48	49	0.09	1423				NOISE										FL100 2DC REARM 1 1
10:44			2DC NOISE PROBABLY PARTLY ASSOCIATED WITH TAS=350KT, COMBINED WITH LOW LASER POWER														2DC REARM AUTO (NOISE ~GONE)
11:56:00	240	0.09	1506				NOISE										FL050 FINAL DESCENT INTO EGDG
12:00:00	360	0.09	1726				NOISE										FL030
12:10																	END LOGGING B397A.DAT NEWQUAY
					Refuel Newquay												
13:25	Vref =	7V															STARTED LOGGING B397B.DAT
13:43			NOISE														Heaters ON
13:44:48	118	0.09	69			0											FL050
13:52:30	158	0.10	84			0											FL040
13:53:25	181	0.09	87			0											FL030
13:54:15	367	0.09	89			0											FL020
13:55:01	518	0.10	90			0											FL010
14:00:45	392	0.10	101			0											100FT ASL START R13 DAU2 CLK 3sec fast
14:03:00	346	0.09	106			0											
14:05:00	333	0.09	109			0											
14:05:51	244	0.09	111			0											END R13
14:07:03	160	0.09	112			0											FL010
14:08:09	165	0.09	113			0											FL020
14:08:36	127	0.08	114			0											FL025 START R14
14:10:00	207	0.09	125			0											SCT SCu
14:12:00	148	0.09	191			0											
14:13:30	231	0.09	192			0											END R14
14:16:00	141	0.09	195			0											FL035
14:17:40	140	0.09	235			0											START R15 FL035 SCT SCu
14:20:00	174	0.09	356			0											
14:22:41	122	0.09	359			0											OVERHEAD CAMBORNE
14:25:00	130	0.09	362			0											
14:27:45	220	0.09	365			0											END R15
14:28:45	107	0.09	366			0											FL040
14:29:48	110	0.09	367			0											FL050
14:39			FFSSP COMPUTER PART FROZEN. DATA LOGGING APPEARS OK.D: DRIVE FAILED														
16:21			PCASP NOISY, APPROX 150 /CC ON CHANNEL 1 . VREF NOW 6.8V														
16:30:01	373	0.08	91			0											END P5 AT 50FT ASL

PCASP Reference Volts = 7.6	FFSSP Reference Volts =3.1	2D2-C End element 1 voltage = 1.3	CIP25 End element 1 voltage = N/A	CIP100 End element 1 voltage = N/A
PCASP Flow rate = 0.85		2D2-C End element 32 voltage = 1.2	CIP25 End element 64 voltage =	CIP100 End element 64 voltage =
© Met Office 2007	SID2 Laser power = N/A	2D2-P End element 1 voltage = N/A		

# CLOUD PHYSICS LOG Flight B397

Date: 22/08/08	Operator: KFT	DRS Time: 05:35:00	DAU1 Time: +0	DAU2 Time: +0	DAU3 Time:	Aux1 Time:	Aux2 Time:	Page 3 of 3
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PCASP Reference Volts = 7.6	FFSSP Reference Volts =3.1	2D2-C End element 1 voltage = 1.3	CIP25 End element 1 voltage = N/A	CIP100 End element 1 voltage = N/A
PCASP Flow rate = 0.85		2D2-C End element 32 voltage = 1.2	CIP25 End element 64 voltage =	CIP100 End element 64 voltage =
© Met Office 2007	SID2 Laser power = N/A	2D2-P End element 1 voltage = N/A		



**CLOUD PHYSICS PROCESSING LOG**

**Flight number:** B397  
**Date of flight:** 22/08/08

**T/O:** 07:30:40 and 13:42:01  
**Land:** 12:06:34 and 18:16:36

<b>A) FFSSP PROCESSING</b>		DONE IN EXETER
Processing Stage	Done?	Comments
1) Transfer *.txt files from DVD to processing PC Bnnn_FFSSP_hh.txt for each hour of data Bnnn_FFSSP_HVMS.txt		hh = Last sec processed =
2) FTP the files (ascii) from the PC to directory PMSDATA: on FLOODS		File size =
3) FLOODS> RUN MRFB:[PMS.FAST_FFSSP]FFSSP_EXTRACT_TAS a) Flight number: Bnnn b) Path name: MFDDATA:Bnnn_MFDX c) Output directory: PMSDATA: d) Start time: 0 if unknown (see comment box)  e) End time: 240000 if unknown		Use time just before/after take-off/landing. If T/O /landing just after/before the hour, ensure start/end time is before/after the hour if there is an FFSSP_hh.txt file for that hour.
4) FLOODS> RUN MRFB:[PMS.FAST_FFSSP]FFSSP_PROCESS_TXT a) Flight number: Bnnn b) Directory: PMSDATA: c) TAS in processing: Y d) Vel threshold (clicks) 0 e) Calibration file: Use the most recent calibration file. Format FFSSP_CALddmmyyyy.txt Calibration files to be stored in MRFB:[PMS.FAST_FFSSP] f) Adjust FFSSP time Y/N g) If Y, enter value to add to data time (seconds)		Total glitches = Sec file written ok?  Note calibration file used  Yes only if gross errors occur in FFSSP time eg; ~ 1hour
5) FLOODS> WAVE a) WAVE> write procffssp_to_m5,'pmsdata:Bnnn_procffssp.dat', 'mfddata:Bnnn_mfdX','pmsdata:Bnnn_m5procffssp',/auto b) WAVE> exit		Use PVWAVE for this section  Note time correction applied to FFSSP by /auto =
6) FLOODS> MODIFY a) Modifying datasets: pmsdata:Bnnn_m5procffssp b) Dataset: mfddata:Bnnn_mfdX c) New dataset: mfddata:Bnnn_mfdY (y=x+1) d) Parameter description file: leave blank to use default		Input file size = M5 output file size =
7) CHECKS: i). Are FFSSP and JW/Nevzorov LWC synchronized in time? In flight_plot, parameters JW LWC para 535 Nevzorov LWC para 602 FFSSP LWC para 1202 ii). If not, repeat from step 5b replacing /auto with addt=x which adds x+20 secs to FFSSP time.		Synchronized?

B) 2D PROCESSING		REPROCESS +1hr
Processing Stage	Done?	Comments
1) Transfer Bnnn.dat file from CD/DVD to PC	Y, Y	
2) Zip up file on PC (Bnnn.zip)	Y, Y	
3) FTP the zipped file (binary) from the PC to the directory SEADAS_DATA:[SEADAS_DATA] on FLOODS	Y, Y	
4) Log on to FLOODS		B397a.dat = 131219 blocks
5) Unzip SEADAS_DATA:[SEADAS_DATA]Bnnn.zip	Y, Y	<b>Size of Bnnnb.dat = 139776</b>
6) FLOODS> <b>WAVE</b> WAVE> <b>CONVERT_SEADAS_FILE</b> a) Input file: <b>SEADAS_DATA:[SEADAS_DATA]Bnnn.dat</b> b) Output file: <b>SEADAS_DATA:[SEADAS_DATA]Bnnn_seadas.dat</b> WAVE> <b>exit</b>	Y, Y	Use PVWAVE for this section <b>Blocks read = 35160, 37679</b> <b>Blocks written= 35160,37679</b>  <b>Bad reads = 0, 0</b>
7) FLOODS> <b>RUN MRFB:[PMS.SEADAS]READM200_FILE</b> a) Default directory: <b>PMSDATA:</b> b) Flight number: <b>Bnnn</b> c) Disk file name: <b>SEADAS_DATA:[SEADAS_DATA]Bnnn_seadas.dat</b> d) Comment string: e) Start time: <i>0 if unknown (T/O – 5 min)</i> f) End time: <i>240000 if unknown (Land + 5 min)</i> g) Read 2DC: <b>Y</b> h) Read 2DP: <b>Y</b> i) Secondary data: <b>Y</b>  j) FSP-SYNC: <b>Y</b> k) cmd.str: <b>Y</b> l) Auto time correction: <b>N</b> m) Full length secondary: <b>N</b>	Y, Y	<b>Start = 072500, 132045</b> <b>End = 121000, 174051</b> Ignore error message scroll (vestigial error from tapes)  <b>Are FRW, FSP, IMB,</b> <b>PCA,SEC</b> <b>files in PMSDATA? Y</b> <b>Are they non-zero in size? Y</b>
8) FLOODS> <b>WAVE</b> i). WAVE> <b>imagedisplay</b> a) 2D directory name: <b>PMSDATA:</b> b) Flight number: <b>Bnnn</b> c) File generation no: <b>0</b> d) Time from IWC plot: <b>N</b> e) Select probe: <b>(1) 2DC (2) 2DP</b> f) Start time: <i>As in 7e above</i> g) End time: <i>As in 7f above</i> h) Time interval (sec): <b>5</b> recommended (0 for all images) ii). WAVE> <b>auto_image</b> a) 2D directory name: <b>PMSDATA:</b> b) Flight number: <b>Bnnn</b> c) Enter date: <b>YYYYMMDD</b> d) Enter start time: <i>0 if unknown (T/O – 1 min)</i> e) Enter end time: <i>240000 if unknown (Land – 1 min)</i> f) Enter time interval (sec) between successive imaged blocks: <b>10</b> iii). WAVE> <b>exit</b> to create files iv). FTP ascii *.PS files from PMSDATA: to PC v). Load each into Ghostview or other pdf-converter vi). Output as pdf file (720 dpi resolution), appending name prefix of <b>CORE-CLOUD-PHY</b> to converted files	Y, Y	2D image display and printing Must be done from FLOODS itself.  <b>Note any problems with</b> <b>images</b> <b>2DC MOSTLY NOISE</b> <b>2DP NOT OPERATED</b> Prepare imagery for Core data From own PC again  <b>Start = 073000, 130000</b> <b>End = 121000, 180000</b>  FAAM_YYYYMMDD_R0_ Bnnn_2Dx-images.ps Notes on this in instructions  <b>1 + 5 PAGES 2DC</b>
	??	

<b>9) FLOODS&gt; RUN</b> <b>MRFB:[PMS.SPEC2D.AUTO]PROCESS2D_AUTO</b> a) Flight number: <b>Bnnn</b> b) Directory: <b>PMSDATA:</b> c) File generation: <i>Hit enter</i> d) Time correction: <i>Time offset of the 2D data</i> e) TAS: <b>Y</b> f) MFD directory: <b>MFDDATA:Bnnn_tas</b> g) Probe number: <b>(1) 2DC (2) 2DP (0) Both</b> <i>0 unless either probe known to be faulty</i> h) Start time: <i>0 if unknown (T/O + 30sec)</i> i) End time: <i>240000 if unknown (Land – 30sec)</i> j) Nominal averaging: <b>0.2</b> seconds for conversion to M5 k) Particle type 2DC: <b>8</b> if known to be in ice cloud <b>11</b> if known to be in water cloud l) Particle type 2DP: <b>8</b> if known to be in mixed-phase <b>8</b> if unknown m) Coefficient choice: <b>2</b> n) Output root filename: <b>PMSDATA:Bnnn_PROC2D</b>	Y, Y	NB. an error message may appear, floating point exception, rerun and use time quoted in error message, repeat until successful. <b>X = B397_TAS</b>  <b>Start = 073000, 130000</b> <b>End = 121000, 180000</b>  <b>Time data processed to = 113519</b> <b>2dproc files present? Y</b> *.2dc, *.2dp and *.dat
<b>10) FLOODS&gt; WAVE</b> i) WAVE> <b>WRITE_PROC2D_TO_M5,</b> <b>'PMSDATA:BNNN_PROC2D.DAT',</b> <b>'PMSDATA:BNNN_M5PROC2D'</b> ii). <b>exit</b>	Y, Y	Use PVWAVE for this section  Error message about HDDR file should be ignored. <b>Records = 27</b>
<b>11) FLOODS&gt; MODIFY</b> a) Modifying datasets: <b>pmsdata:Bnnn_m5proc2D</b> b) Datset: <b>mfddata:Bnnn_tas</b> c) New dataset: <b>mfddata:Bnnn_tas_2d</b> d) Parameter description file: leave blank to use default	Y, Y	<b>X = B397_TAS</b> <b>Y = (X+1) = B397_TAS_2D</b>
<b>12) CHECKS:</b> Are 2DC/2DP IWC of comparable magnitude and well-correlated with Nevzorov TWC? <i>In flight_plot, parameters</i> <i>Nevzerov TWC para 605</i> <i>2DC IWC para 1302</i> <i>2DP IWC para 1312</i>	N	<b>Use flight_plot to check data is present in mfd file? Y, Y</b>

**CLOUD PHYSICS PROCESSING LOG**

**Flight number:** B397  
**Date of Flight:** 22/08/08

<b>C) PCASP PROCESSING</b>		
Processing Stage	Done?	Comments
1) Complete stage 7) in 2D processing Ensures Bnnn_FSP.DAT containing raw PCASP data is written to directory PMSDATA:	Y, Y	
2) FLOODS> <b>RUN MRFB:[PMS.PCASP]PROCPCASP_NEW</b> a) Flight number: <b>Bnnn</b> b) File name: <b>PMSDATA:Bnnn_FSP.DAT</b> c) Root output name: <b>PMSDATA:Bnnn_PROCPCASP</b> Produces PMSDATA:Bnnn_PROCPCASP.DAT (binary) PMSDATA:Bnnn_PROCPCASP.OUT (ascii) d) Minimum size channel: <i>default = 1</i> <i>If smallest size channel are known to be noisy the value of the highest noise free channel to be entered here</i> e) Calibration volume flow rate: <i>Use the most recent value. (1.15ccs<sup>-1</sup> Feb 07)</i> <i>Calibration files to be stored in <b>Exeter</b></i> <i>Entering zero gives default value = 1.0 cm<sup>3</sup>s<sup>-1</sup></i> f) Time correction: <i>Same value as used in 2D processing stage 9d</i> g) Start time: <i>0 if unknown</i> h) End time: <i>240000 if unknown</i>	Y, Y	<b>Min size = 1</b>  <b>Vol flow rate = 0.85</b>
3) FLOODS> <b>WAVE</b> i).WAVE> <b>write_procpcasp_to_m5,</b> <b>'pmsdata:Bnnn_procpcasp.dat',</b> <b>'pmsdata:Bnnn_m5procpcasp'</b> ii). WAVE> <b>exit</b>	Y, Y	Use PVWAVE for this section
4) FLOODS> <b>MODIFY</b> a) Modifying datasets: <b>pmsdata:Bnnn_m5procpcasp</b> b) Dataset: <b>mfddata:Bnnn_tas_2d</b> c) New dataset: <b>mfddata:Bnnn_tas_2d_pcasp</b> d) Parameter description file: <i>leave blank to use default</i>	Y, Y	<b>X = b397_tas_2d</b> <b>Y = X+1 = _tas_2d_pcasp</b>
5) CHECKS Are PCASP and JW peaks synchronous? <i>In flight_plot, parameters</i> <i>Neph – total blue scatter.</i> <i>PCASP conc para 1550</i>	N	<b>Is data present in mfd? Y</b> Use flight_plot to check.

# FAAM Dropsonde Flight Log

<b>Flight No.</b>	B397	<b>Date</b>	22/08/2008	<b>Operator</b>	S Devereau	<b>Page No.</b>	1 of 2
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GMT	Sonde No.	Event <i>eg land, splashdown</i>	Comments <i>pressure hPa, T deg C, RH %, wind direction deg, wind speed m/s, longitude, latitude, height m</i>
082031	1	Launch	459.43 9999 10.03 16.40 152.05 0.29 -4.860485 50.126230 6498.40
	1		Late launch detect (45 s), otherwise good drop
082816	1	Splashdown	1016.29 15.20 86.13 320.46 5.80 -10.72 -4.817192 50.090201 -87.74
	1	Tx to MDB	no
082527	2	Launch	465.30 -20.70 75.47 282.40 999999 9999 -5.405900 50.233800 6100.90
	2		End-cap and parachute loosened prior to launch. Good drop.
083324	2	Splashdown	1008.41 14.08 86.84 330.27 7.34 -10.40 -5.359289 50.192292 -26.93
091024		Tx to MDB	yes
083723	3	Launch	569.71 4.26 28.78 277.28 96.94 0.04 -6.253324 50.385060 99999.00
	3		No launch detect. Wind data still produced. End-cap and parachute <i>not</i> loosened prior to launch. Launch data transfer from HORACE failed prior to launch.
084108	3	Splashdown	1016.81 14.34 79.68 5.39 7.56 -0.37 -6.232417 50.365371 99999.00
	3	Tx to MDB	no
084225	4	Launch	571.37 3.51 22.55 999.00 999.00 99.00 999.000000 99.000000 99999.00
	4		Launch data transfer from HORACE failed prior to launch.
084841	4	Splashdown	1017.74 14.12 81.96 341.47 7.18 -11.21 -5.623618 50.249108 99999.00
091930	4	Tx to MDB	yes
104151	5	Launch	571.40 -10.00 50.71 282.60 167.00 120.80 -5.526100 50.255500 4577.90
	5		Launch data transfer from HORACE ok prior to launch.
104759	5	Splashdown	1018.93 14.42 78.90 328.91 7.05 -10.97 -5.498189 50.224881 -84.43
	5	Tx to MDB	
105850	6	Launch	376.38 -7.16 5.24 287.10 107.44 -0.13 -6.144368 50.362812 99999
	6		Launch data transfer from HORACE failed prior to launch. Good drop.
110816	6	Splashdown	1019.67 14.94 70.25 332.54 8.23 -7.57 -6.083053 50.305900
131300	6	Tx to MDB	Yes
110431	7	Launch	350.82 18.35 7.81 286.28 179.22 -0.20 -5.341562 50.221446 99999
	7		Launch data transfer from HORACE failed prior to launch. No launch detect but data and fall rate ok. On land, from whence it continued to transmit.
111337	7	Landing	996.15 13.15 91.15 333.36 4.94 -10.66 -5.282767 50.169240 99999
	7		
112624	8	Launch	274.30 -49.60 44.10 287.60 219.30 151.90 -5.722000 50.291800 9756.60
	8		Launch data transfer from HORACE ok prior to launch. Good drop.
113755	8	Splashdown	1019.53 14.42 78.63 337.76 7.40 -11.31 -5.645848 50.218026 -146.34
	8		
112900	9	Launch	274.40 -49.30 47.00 287.20 215.30 151.60 -6.053800 50.355300 9756.00
	9		Launch data transfer from HORACE ok prior to launch. Good drop.
114033	9	Splashdown	1018.92 14.73 73.99 327.40 7.20 -11.07 -5.972801 50.275997 -165.34
130800	9	Tx to MDB	Yes

## FAAM Dropsonde Flight Log

<b>Flight No.</b>	B397	<b>Date</b>	22/08/2008	<b>Operator</b>	S Devereau	<b>Page No.</b>	2 of 2
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150746	10	Launch	478.15 -17.89 42.46 0.00 0.00 0.00 -6.081354 50.330917 5925.07
	10		Launch data transfer from HORACE failed prior to launch. Good drop.
151545	10	Splashdown	1018.67 14.94 79.24 319.28 7.45 -10.95 -5.930593 50.295168
	10	Tx to MDB	Yes
151143	11	Launch	585.67 -7.58 55.61 999.00 999.00 99.00 999.000000 99.000000
	11		Late launch detect and GPS winds. Launch data transfer from HORACE failed prior to launch.
151743	11	Splashdown	1019.74 14.78 83.85 311.59 5.42 -10.81 -5.598351 50.240802
	11		
152836	12	Launch	364.33 -21.16 5.35 352.79 21.82 -19.50 -5.323105 50.214470
	12		Launch data transfer from HORACE ok prior to launch. Good drop.
153827	12	Splashdown	995.70 13.78 73.50 323.07 7.71 -11.64 -5.253333 50.154368
	12	Tx to MDB	Yes
153403	13	Launch	359.60 -33.30 34.83 286.50 189.50 133.20 -5.941600 50.325700
	13		Launch data transfer from HORACE ok prior to launch. Good drop
154403	13	Splashdown	1019.07 14.93 77.66 320.12 7.45 -11.11 -5.873382 50.265248
	13	Tx to MDB	Yes
154847	14	Launch	274.20 3.22 3.69 276.09 68.40 0.00 -6.194860 50.367738 10642.21
	14		Launch data transfer from HORACE failed prior to launch. Good drop
160012	14	Splashdown	1019.05 15.08 76.46 320.02 6.79 -11.18 -6.116831 50.282118 -134.07
	14	Tx to MDB	Yes
155429	15	Launch	274.98 -9.70 0.67 339.79 31.34 0.00 -5.114088 50.214988 99999.00
	15		Launch data transfer from HORACE failed prior to launch. Good drop
160546	15	Land	1000.05 13.84 77.67 326.13 7.00 -10.83 -5.236279 50.132280 99999.00
	15	Tx to MDB	Yes
172946	16	Launch	465.28 2.43 0.81 69.54 10.14 -0.00 -5.320246 50.216985 6360.75
	16		Launch data transfer from HORACE ok prior to launch. Good drop.
173706	16	Land	995.49 13.06 87.37 309.26 7.13 -11.79 -5.272646 50.179147 58.60
	16		
173457	17	Launch	464.61 7.66 0.55 107.11 56.00 -0.17 -5.938635 50.188289 6397.47
	17		Launch data transfer from HORACE ok prior to launch. Good drop.
174259	17	Splashdown	1018.75 14.97 79.55 316.81 6.46 -10.52 -5.800133 50.273212 -137.90
	17		

CVI log

8/22/08 7:51:11 AM Had to re-start in transit - Some Horace data missing and PCASP not communicating  
8/22/08 7:52:39 AM Re-booted and got Horace back - then turned PCASP off and on and re-booted again - now working  
8/22/08 8:20:15 AM Start of run 1  
8/22/08 8:30:12 AM End of run 1  
8/22/08 8:37:06 AM Start of run 2  
8/22/08 10:35:15 AM Start of run 10  
8/22/08 10:41:17 AM Can't work out what the spikes in the hygro and coincident drops in PCASP are. We are in apparent clear air.  
8/22/08 10:45:10 AM end of run 10  
8/22/08 10:57:59 AM Start of run 11 fl250  
8/22/08 11:03:20 AM Counterflow indicator briefly showed during last hygro spike - must be comms/timing issue  
8/22/08 11:08:07 AM end of run 11  
8/22/08 11:18:23 AM start of run

CVI log

8/22/08	1:50:46 PM	Not all Horace data coming in - restart of vi resolved issue
8/22/08	2:32:41 PM	Start of run 16
8/22/08	2:42:57 PM	end of run 16
8/22/08	2:51:18 PM	Start of run 17
8/22/08	3:01:18 PM	End of run 17
8/22/08	3:07:54 PM	start of run 18
8/22/08	3:16:30 PM	end of run
8/22/08	3:24:46 PM	start of run 19
8/22/08	3:34:51 PM	end of run
8/22/08	3:48:45 PM	start of run 20
8/22/08	3:57:44 PM	end of run
8/22/08	3:58:31 PM	start of profile descent



# ARIES flight log

Flight: B397

page 1 of 4

Date: 22/8/08 Operator(s): S.M. NEWMAN

Res: 1 Gain A: 2 B: 2

Loc./Notes: CAVIAR (Camborne, SW England) DOUBLE FLIGHT

Scans: either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]". View: mirror angle.

DRS time	Flt ptrn	Scans	View	Shtr	HBB	CBB	Comments
071857	—	10.NZ30s		0	71	31	Test of new macro on pan pre-T/O Abort 072215 - successful test CH(30s) N(30s) CH(30s) Z(30s) repeat
082011	R1 FL200	10.NZ30s		0	71	31	Clear above, CuSc below 7/8 Shutter being kept open throughout 083011 abort for end of run
083711	R2 FL150	10.NZ30s		0	71	31	Cu below 2/8 at start of run Contrails/Ci above but to the south More like 7/8 below over land, even 8/8 084758 abort
085216	R3 FL100	10.NZ30s		0	71	31	8/8 Sc below at start, thinning during run Pretty clear below at 090000, gap 090214 abort
090702	R4 FL060	10.NZ30s		0	71	31	Only few wisps of Cu below at start Clear above, but Contrails around 0910 touching cloud tops 0912 in clear air above + below 091330 skimming tops again 091430 in cloud, thick towards end 091701 abort
092121	R5 FL040	10.NZ30s		0	71	31	Started just before official start of run 092230 in cloud, multi-layer Cu/Sc 0925 v. thin cloud layer, patchy, above 092630 in cloud 092830 clear above, 1/8 Cu below 093223 abort
094059	R6 100 ft	10.NZ30s		0	71	31	Some Cu above Abort 094757, final cal in climb
095028	R7 2500 ft	10.NZ30s		0	71	31	In cloud at times Abort 095512



# ARIES flight log

Flight: B397

page 2 of 4

Date: 22/8/08

Operator(s): S. M. NEWMAN

Res: 1

Gain A: 2 B: 2

Loc./Notes: CAVIAR (Camborne, SW England) double flight

Scans: either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]". View: mirror angle.

DRS time	Flt ptrn	Scans	View	Shtr	HBB	CBB	Comments
095823	F2035	10.NZ30s		0	71	31	Started shortly before start of run
	R8						Clear below at A (eastern point) then 100000 multi-layer Cu 109139 in cloud, having to turn for traffic
100338	"	1.CH Cu		0	71	31	(macro had crashed)
100452	"	10.NZ30s		0	71	30	mile so S of Camborne, turning
							1007 clear above, few Cu below
							100929 abort
101504	R9	10.NZ30s		0	71	31	Clear above, 2/8 Cu below
	F2015						1021 approaching thicker Cu below
							1025 clear above, some Cu below
							Abort 102550 in climb/turn
103326	R10	10.NZ30s		0	71	31	Start just before start of run
	F2150						Clear above, 6/8 stratiform cloud below
							1039 over quite thick Sc
							1042 2 or 3 eighths Cu below, clear above
							104528 abort
105752	R11	10.NZ30s		0	71	30	Clear above, 2/8 Cu below
	F2250						110230 Cu fields over land
							110753 abort
111722	R12	10.NZ30s		0	71	30	Just before run commenced
	F2320						suspicious data at start?
							1120 looks clear above, 7/8 Cu below raw data look better now
							112330 Cu below 2/8
							112931 abort
END OF FLIGHT A — REFUEL PRIOR TO FLIGHT B							
140038	R13	10.NZ30s		0	71	31	Few Cu above
	100ft						140621 abort
140840	R14	10.NZ30s		0	70	31	At level of some Cu, above which it is clear
	2500ft						141330 abort
141634	R15	10.NZ30s		0	71	31	Still at cloud level, 6/8 at A
	F2035						142230 Cu below at Camborne



# ARIES flight log

Flight: B 397

page 3 of 4

Date: 22/8/08

Operator(s): S.M. NEWMAN

Res: 1

Gain A: 2 B: 2

Loc./Notes: CAVIAR (Camborne, SW England) double flight

Scans: either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]". View: mirror angle.

DRS time	Flt ptrn	Scans	View	Shtr	HBB	CBB	Comments
							1424 looks clear above+below
							142530 some Cu above+below, more below
							142744 abort
143247	R16	10.NZ30s		0	71	31	Only 1/8 Cu below at B
	FL075						1438 (Camborne) 7/8 Cu below
							144332 abort, final cal in turn
145019	R17	10.NZ30s		0	71	31	4/8 Cu over the land below
	FL140						1456 Cu streets below ~ 3/8
							1459 pretty clear below? + clear above
150116							Abort for end of run
150725	R18	10.NZ30s		0	71	31	2/8 Cu below at B, clear above
	FL200						151315 over Camborne, ~ 4/8 Cu
							~ 1/8 Cu below at A 151704 abort
152257	R19	10.NZ30s		0	71	30	Started 1 min before start of run
	FL260						1525 ~ 3/8 Cu below, clear above
							1529 Clear patches below, ~ 2/8 Cu
							Some calibrated BTs look strange (?)
							153459 abort
							1540: odd signature in Ch. A raw spectrum, fell below 50% ADC when at Zenith; pointed at HBB and recovered to 67%
154849	R20	10.NZ30s		0	71	30	At pt B some status + Cu below, clear above
	FL320						1057 near A, looks fairly clear below+above
							155820 abort, final cal in profile
163006	R21	10.NZ30s		0	71	32	Under stratiform cloud for much of time
	100 ft						163440, clear above?
							163453 abort for end of run
163737	R22	10.NZ30s		0	71	31	In cloud at start - out at 163950
	2400 ft						but only briefly, bit clearer towards A Very cloudy run
							164207 abort for end of run
164534	R23	10.NZ30s		0	71	32	164630 patchy Cu below, clear above
	5000 ft						164930 ~ 4/8 Cu?



# ARIES flight log

Flight: B 397

page 4 of 4

**Date:** 22/8/08

Operator(s): S.M. NEWMAN

**Res:**

Gain A: 2 B: 2

Loc./Notes: CAVIAR (Camberne, SW England) double flight

**Scans:** either “[IGMs]X[co-adds]”, or “[stop DRS time]” if in start/stop, or “[macro name]”. **View:** mirror angle.

[illegible]

<b>Microwave Radiometers FLIGHT LOG</b>		Date	22/08/08	Flight	B397	log pages	
Operator(s)	Pollard	Campaign	CAVIAR				
Departure	Cranfield	Arrival	Cranfield via St Mawgan				

### System start

### MARSS

Visual pod inspection							X
Close 3 SSP circuit breakers							X
Close all MARSS circuit breakers							X
FERA on				at time		5:59	
Temperature controller initial temps	Ch16	20.3°C	Ch	20.5°C	Ch18	19.6°C	
Temperature controller set points		54°C	17	58°C	-20	40°C	
MARSS CPU on				at time		6:01	
Initial target temperatures	Hot	291.1	Cold			287.3	
Target heating							X
*** CHECK SCAN HEAD CLEAR ***							X
Scanning on (LMD box)				at time		06:05	
Scan indication			Monitor	)		Visual	X

### Deimos

Deimos Orientation (Nadir or Zenith)							Z
Close all Deimos circuit breakers							X
Turn on Deimos CPU							X
*** CHECK SCAN HEAD CLEAR ***							X
Start Deimos Software				at time		06:02	
Initial target temperatures	Hot	291.6	Cold			289.0	
Target heating							X
Scan indication			Monitor	)		Visual	X
Weather	Cloud				Precip		
	Surface				Pressure		
	Other						

### System functionality check

(after initial system warmup, approx 1 hour)

PC to DRS Time error	$t_{PC}=t_{DRS} +$	0	at time	Start up	
Brightness temps 'sensible'					
Target temps	MARSS:	Hot	344.64	Cold	287.34
	Deimos:	Hot	344.74	Cold	296.95
Channel gains 'sensible'	Ch1 A (-)	Ch3 A (-)	Ch1 B (-)	Ch3 B (-)	
	56.4	16.2	56.1	14.1	
	Ch16 (40-44)	Ch17 (45-49)	Ch18 (40-44)	Ch19 (40-44)	Ch20 (44-48)
	40.07	32.38	40.33	41.31	42.79

### Power changeover

Headset on before start		
Listen to engine start sequence	4, 3, 2, 1.	
LMD off (3 switches, bottom to top)		
Exit Deimos Software (x)		
POWER CHANGEOVER		
LMD on (3 switches, top to bottom)	then pushbutton	
Restart Deimos Software		
System running again		at time

Flight #	B397	Date	22/08/08	Operator(s)	Pollard	log page	2	of	3
Time	Run id	Alt/FL	Remarks					Sys	
06:15			Good start marss, deimos took a while to see PRTs, usual problems starting Deimos vis s/w						
			Resting MARSS scanner.						
07:08			MARSS scanner restarted, BTs slow to recover						
12:12			Deimos off for a power changeover that isn't going to happen for a while,...						
13:07			Clocks reset, MARSS 12 sec fast, deimos ok						
13:21			Nearly ready for flight B c/o						
17:53			Deimos off Marss scanning off, MARSS 9 sec fast						
			Martian crashed during last FL50 run.						

Flight #	<b>B397</b>	Date	<b>22/08/08</b>	Operator(s)	<b>Pollard</b>	log page	<b>3</b>	of	<b>3</b>
<i>Time</i>	<b>Run id</b>	<b>Alt/FL</b>	<i>Remarks</i>					<b>Sys</b>	

Data Processing Log				Initials	Date
Flight data copied from MARSS/Deimos PC flash disk to Martian C:\Bxxx\					
Check disc space on flash disk (need >~10 MB free)					
<b>Copy*</b> Martian logged data from to C:\Bxxx\					
Wave processing run and BT files generated					
DQM file generated and uploaded					
NetCDF file generated and uploaded					
C:\Bxxx\ copied to USB drive or CD					
Data processing issues/notes:					

## B397\_SWS\_SHIMS\_EventLog.txt

```

07:08:22.01 --- - - - -
07:08:22.01 --- - - - - +++ SOFTWARE START/RESTART +++
07:08:22.01 --- - - - - +++ hh:mm:ss.ff / Instr / Posn / Period /
tVIS/ tNIR / Comment +++
07:08:22.01 --- - - - - +++ Flight no. B397
07:08:22.01 --- - - - -
07:09:00.28 SWS - - - - ERROR: Failed to initialise telescope.
07:09:06.38 SWS - - - - Telescope disabled.
07:09:11.09 SWS - - - - Telescope motor initialised.
07:09:19.95 SWS 0.0 - - - - Telescope sent to 90.000
07:09:21.06 SWS 90.0 - - - - Telescope stopped.
07:09:23.69 SWS 90.0 - - - - Telescope sent to 90.000
07:09:33.56 SWS - - - - Initialization: VIS OK NIR OK
07:09:37.68 USH - - - - Initialization: VIS OK NIR OK
07:09:39.98 LSH - - - - Initialization: VIS OK NIR OK
07:09:44.41 SWS - - - 10 NIR int.time changed from 10ms to 10ms.
07:09:48.72 SWS - 100 - - Sample period changed from 250ms to 100ms.
07:09:56.61 USH - 100 - - Sample period changed from 250ms to 100ms.
07:09:59.34 USH - - - 10 NIR int.time changed from 10ms to 10ms.
07:10:02.23 LSH - 100 - - Sample period changed from 250ms to 100ms.
07:10:04.11 LSH - - - 10 NIR int.time changed from 10ms to 10ms.
07:10:08.81 SWS - - 1000 - VIS int.time changed from 10ms to 1000ms.
07:10:08.81 SWS - - - 1000 NIR int.time changed from 10ms to 1000ms.
07:10:15.65 USH - - 1000 - VIS int.time changed from 10ms to 1000ms.
07:10:15.66 USH - - - 1000 NIR int.time changed from 10ms to 1000ms.
07:10:19.16 LSH - - 1000 - VIS int.time changed from 10ms to 1000ms.
07:10:19.16 LSH - - - 1000 NIR int.time changed from 10ms to 1000ms.
07:10:25.97 --- - - - - Reset shutters.
07:10:29.97 --- - - - - Reset shutters.
07:10:34.42 SWS - - - - Manual scene sampling started - Not Recording!
07:10:34.42 LSH - - - - Manual scene sampling started - Not Recording!
07:10:34.44 USH - - - - Manual scene sampling started - Not Recording!
07:10:54.89 SWS - - - - Idling
07:10:55.15 LSH - - - - Idling
07:10:55.43 USH - - - - Idling
07:11:13.00 USH - - - - Dark measurement started.
07:11:13.01 SWS - - - - Dark measurement started.
07:11:13.02 LSH - - - - Dark measurement started.
07:11:14.63 LSH - - - - Warning: Abnormally bright dark measurement.
07:11:23.46 USH - - - - Idling
07:11:23.66 SWS - - - - Idling
07:11:23.86 LSH - - - - Idling
07:11:24.76 SWS - - - - Dark measurement started.
07:11:24.77 LSH - - - - Dark measurement started.
07:11:24.77 USH - - - - Dark measurement started.
07:11:35.20 SWS - - - - Idling
07:11:35.40 LSH - - - - Idling
07:11:35.60 USH - - - - Idling
07:11:39.46 SWS - - - - Manual scene recording started.
07:11:39.46 LSH - - - - Manual scene recording started.
07:11:39.47 USH - - - - Manual scene recording started.
07:11:56.03 SWS - - - - Idling
07:11:56.24 LSH - - - - Idling
07:11:56.43 USH - - - - Idling
07:11:59.37 LSH - - - - Manual scene sampling started - Not Recording!
07:11:59.37 USH - - - - Manual scene sampling started - Not Recording!
07:11:59.38 SWS - - - - Manual scene sampling started - Not Recording!
07:15:21.31 --- - - - - Reset shutters.
07:15:27.10 USH - - - - Dark measurement started.
07:15:27.13 LSH - - - - Dark measurement started.
07:15:27.20 SWS - - - - Dark measurement started.
07:15:28.53 LSH - - - - Warning: Abnormally bright dark measurement.
07:15:37.54 USH - - - - Manual scene sampling started - Not Recording!
07:15:37.75 LSH - - - - Manual scene sampling started - Not Recording!
07:15:37.94 SWS - - - - Manual scene sampling started - Not Recording!
07:15:43.84 USH - - - - Manual scene recording started.
07:15:44.05 LSH - - - - Manual scene recording started.

```



07:15:44.24	SWS	-	-	-	-	Manual scene recording started.
07:15:53.67	SWS	-	-	-	-	Idling
07:15:54.26	USH	-	-	-	-	Idling
07:15:54.50	LSH	-	-	-	-	Idling
07:16:10.78	SWS	-	-	100	-	VIS int.time changed from 1000ms to 100ms.
07:16:10.78	SWS	-	-	-	100	NIR int.time changed from 1000ms to 100ms.
07:16:14.26	USH	-	-	100	-	VIS int.time changed from 1000ms to 100ms.
07:16:14.27	USH	-	-	-	100	NIR int.time changed from 1000ms to 100ms.
07:16:17.61	LSH	-	-	100	-	VIS int.time changed from 1000ms to 100ms.
07:16:17.61	LSH	-	-	-	100	NIR int.time changed from 1000ms to 100ms.
07:16:20.44	SWS	-	-	-	-	Dark measurement started.
07:16:20.44	LSH	-	-	-	-	Dark measurement started.
07:16:20.47	USH	-	-	-	-	Dark measurement started.
07:16:23.21	LSH	-	-	-	-	Idling
07:16:23.21	SWS	-	-	-	-	Idling
07:16:23.29	USH	-	-	-	-	Idling
07:16:25.40	SWS	-	-	-	-	Manual scene recording started.
07:16:25.41	LSH	-	-	-	-	Manual scene recording started.
07:16:25.41	USH	-	-	-	-	Manual scene recording started.
07:17:33.89	USH	-	-	-	-	Idling
07:17:33.95	SWS	-	-	-	-	Idling
07:17:33.95	LSH	-	-	-	-	Idling
07:17:39.44	SWS	-	-	1000	-	VIS int.time changed from 100ms to 1000ms.
07:17:39.44	SWS	-	-	-	1000	NIR int.time changed from 100ms to 1000ms.
07:17:42.41	USH	-	-	1000	-	VIS int.time changed from 100ms to 1000ms.
07:17:42.41	USH	-	-	-	1000	NIR int.time changed from 100ms to 1000ms.
07:17:45.16	LSH	-	-	1000	-	VIS int.time changed from 100ms to 1000ms.
07:17:45.16	LSH	-	-	-	1000	NIR int.time changed from 100ms to 1000ms.
07:17:47.93	---	-	-	-	-	Reset shutters.
07:17:51.83	USH	-	-	-	-	Manual scene sampling started - Not Recording!
07:17:51.83	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
07:17:51.84	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
07:19:09.14	LSH	-	-	600	-	VIS int.time changed from 1000ms to 600ms.
07:19:09.15	LSH	-	-	-	600	NIR int.time changed from 1000ms to 600ms.
07:19:14.45	LSH	-	-	-	-	Dark measurement started.
07:19:15.28	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
07:19:20.90	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
07:19:22.22	LSH	-	-	-	-	Manual scene recording started.
07:19:26.78	LSH	-	-	-	-	Idling
07:19:26.89	USH	-	-	-	-	Idling
07:19:27.84	SWS	-	-	-	-	Idling
07:19:42.99	USH	-	-	300	-	VIS int.time changed from 1000ms to 300ms.
07:19:43.00	USH	-	-	-	300	NIR int.time changed from 1000ms to 300ms.
07:19:46.69	SWS	-	-	300	-	VIS int.time changed from 1000ms to 300ms.
07:19:46.69	SWS	-	-	-	300	NIR int.time changed from 1000ms to 300ms.
07:19:51.11	LSH	-	-	-	-	Dark measurement started.
07:19:51.11	USH	-	-	-	-	Dark measurement started.
07:19:51.11	SWS	-	-	-	-	Dark measurement started.
07:19:52.12	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
07:19:52.44	USH	-	-	-	-	Warning: Abnormally bright dark measurement.
07:19:52.92	SWS	-	-	-	-	Warning: Abnormally bright dark measurement.
07:19:55.86	SWS	-	-	-	-	Idling
07:19:55.90	USH	-	-	-	-	Idling
07:19:58.21	LSH	-	-	-	-	Idling
07:19:59.30	---	-	-	-	-	Reset shutters.
07:20:03.84	SWS	-	-	-	-	Dark measurement started.
07:20:03.84	LSH	-	-	-	-	Dark measurement started.
07:20:03.85	USH	-	-	-	-	Dark measurement started.
07:20:04.87	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
07:20:07.28	SWS	-	-	-	-	Idling
07:20:07.68	USH	-	-	-	-	Idling
07:20:08.14	SWS	-	-	-	-	Dark measurement started.
07:20:08.15	USH	-	-	-	-	Dark measurement started.
07:20:10.49	LSH	-	-	-	-	Idling
07:20:11.57	SWS	-	-	-	-	Idling
07:20:11.77	USH	-	-	-	-	Idling
07:20:12.58	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
07:20:12.58	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
07:20:12.58	USH	-	-	-	-	Manual scene sampling started - Not Recording!

07:32:55.31	USH	-	-	-	-	Idling
07:32:55.69	SWS	-	-	-	-	Idling
07:32:56.00	LSH	-	-	-	-	Idling
07:32:57.21	---	-	-	-	-	Reset shutters.
07:33:08.19	USH	-	1000	-	-	Sample period changed from 100ms to 1000ms.
07:33:12.03	SWS	-	1000	-	-	Sample period changed from 100ms to 1000ms.
07:33:15.08	LSH	-	1000	-	-	Sample period changed from 100ms to 1000ms.
07:33:31.05	SWS	89.9	-	-	-	Telescope sent to 174.000
07:33:32.16	SWS	174.0	-	-	-	Telescope stopped.
07:33:34.83	SWS	174.0	-	-	-	Telescope sent to 174.000
07:33:42.67	LSH	-	-	-	-	Dark measurement started.
07:33:42.67	USH	-	-	-	-	Dark measurement started.
07:33:42.69	SWS	-	-	-	-	Dark measurement started.
07:33:43.50	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
07:33:46.31	USH	-	-	-	-	Idling
07:33:46.51	SWS	-	-	-	-	Idling
07:33:48.67	SWS	-	-	-	-	Manual scene recording started.
07:33:48.67	USH	-	-	-	-	Manual scene recording started.
07:33:49.12	LSH	-	-	-	-	Idling
07:37:33.95	SWS	-	-	-	-	Warning: Clipping may be occurring.
07:38:33.29	SWS	-	-	-	-	Warning: Clipping may be occurring.
07:38:49.48	SWS	-	-	-	-	Idling
07:38:49.48	USH	-	-	-	-	Idling
07:38:51.56	---	-	-	-	-	Reset shutters.
07:38:58.17	SWS	-	-	-	-	Dark measurement started.
07:38:58.17	LSH	-	-	-	-	Dark measurement started.
07:38:58.18	USH	-	-	-	-	Dark measurement started.
07:38:59.20	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
07:39:01.60	SWS	-	-	-	-	Idling
07:39:02.01	USH	-	-	-	-	Idling
07:39:04.82	LSH	-	-	-	-	Idling
07:39:05.40	SWS	-	-	100	-	VIS int.time changed from 300ms to 100ms.
07:39:05.41	SWS	-	-	-	100	NIR int.time changed from 300ms to 100ms.
07:39:08.88	USH	-	-	100	-	VIS int.time changed from 300ms to 100ms.
07:39:08.88	USH	-	-	-	100	NIR int.time changed from 300ms to 100ms.
07:39:11.67	LSH	-	-	-	-	Dark measurement started.
07:39:11.68	SWS	-	-	-	-	Dark measurement started.
07:39:11.68	USH	-	-	-	-	Dark measurement started.
07:39:12.50	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
07:39:14.17	SWS	-	-	-	-	Idling
07:39:14.32	USH	-	-	-	-	Idling
07:39:15.37	SWS	-	-	-	-	Dark measurement started.
07:39:15.38	USH	-	-	-	-	Dark measurement started.
07:39:16.83	SWS	-	-	-	-	Idling
07:39:17.01	USH	-	-	-	-	Idling
07:39:18.24	USH	-	-	-	-	Manual scene recording started.
07:39:18.24	SWS	-	-	-	-	Manual scene recording started.
07:39:18.67	LSH	-	-	-	-	Idling
07:39:47.64	LSH	-	-	-	-	Manual scene recording started.
07:41:19.51	SWS	-	-	-	-	Warning: Clipping may be occurring.
07:44:14.11	SWS	-	-	-	-	Idling
07:44:14.11	LSH	-	-	-	-	Idling
07:44:14.32	USH	-	-	-	-	Idling
07:44:16.47	---	-	-	-	-	Reset shutters.
07:44:21.80	SWS	-	-	-	-	Dark measurement started.
07:44:21.80	LSH	-	-	-	-	Dark measurement started.
07:44:21.81	USH	-	-	-	-	Dark measurement started.
07:44:22.82	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
07:44:23.25	SWS	-	-	-	-	Idling
07:44:23.66	USH	-	-	-	-	Idling
07:44:28.44	LSH	-	-	-	-	Idling
07:44:32.62	SWS	-	-	-	-	Dark measurement started.
07:44:32.62	LSH	-	-	-	-	Dark measurement started.
07:44:32.63	USH	-	-	-	-	Dark measurement started.
07:44:33.65	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
07:44:34.06	SWS	-	-	-	-	Idling
07:44:34.46	USH	-	-	-	-	Idling
07:44:39.28	LSH	-	-	-	-	Idling
07:44:41.35	SWS	-	-	-	-	Manual scene recording started.

07:44:41.35	LSH	-	-	-	-	Manual scene recording started.
07:44:41.36	USH	-	-	-	-	Manual scene recording started.
07:54:27.18	SWS	-	-	-	-	Warning: Clipping may be occurring.
07:54:50.71	SWS	-	-	-	-	Warning: Clipping may be occurring.
07:55:39.12	LSH	-	-	-	-	Idling
07:55:39.66	USH	-	-	-	-	Idling
07:55:39.68	SWS	-	-	-	-	Idling
07:55:41.85	---	-	-	-	-	Reset shutters.
07:55:47.19	LSH	-	-	-	-	Dark measurement started.
07:55:47.19	USH	-	-	-	-	Dark measurement started.
07:55:47.21	SWS	-	-	-	-	Dark measurement started.
07:55:48.01	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
07:55:48.84	USH	-	-	-	-	Idling
07:55:49.04	SWS	-	-	-	-	Idling
07:55:50.35	USH	-	-	-	-	Dark measurement started.
07:55:50.35	SWS	-	-	-	-	Dark measurement started.
07:55:51.78	USH	-	-	-	-	Idling
07:55:51.98	SWS	-	-	-	-	Idling
07:55:53.26	SWS	-	-	-	-	Dark measurement started.
07:55:53.26	USH	-	-	-	-	Dark measurement started.
07:55:53.64	LSH	-	-	-	-	Idling
07:55:54.71	SWS	-	-	-	-	Idling
07:55:54.90	USH	-	-	-	-	Idling
07:56:03.08	USH	-	-	-	-	Manual scene recording started.
07:56:03.09	SWS	-	-	-	-	Manual scene recording started.
07:56:03.10	LSH	-	-	-	-	Manual scene recording started.
08:05:43.69	SWS	-	-	-	-	Warning: Clipping may be occurring.
08:06:23.60	SWS	-	-	-	-	Warning: Clipping may be occurring.
08:06:47.11	SWS	-	-	-	-	Warning: Clipping may be occurring.
08:07:37.24	SWS	-	-	-	-	Warning: Clipping may be occurring.
08:08:06.79	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:08:07.65	SWS	-	-	-	-	Idling
08:08:09.13	SWS	-	-	-	-	Dark measurement started.
08:08:10.57	SWS	-	-	-	-	Idling
08:08:13.56	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
08:08:16.44	SWS	-	-	45	-	VIS int.time changed from 100ms to 45ms.
08:08:22.25	SWS	-	-	-	-	Dark measurement started.
08:08:23.91	SWS	-	-	-	-	Idling
08:08:25.20	SWS	-	-	-	-	Manual scene recording started.
08:08:59.25	SWS	-	100	-	-	Sample period changed from 1000ms to 100ms.
08:09:33.58	SWS	-	1000	-	-	Sample period changed from 100ms to 1000ms.
08:09:37.07	LSH	-	-	-	-	Idling
08:09:37.57	SWS	-	-	-	-	Idling
08:09:37.69	USH	-	-	-	-	Idling
08:09:46.14	USH	-	-	-	-	Manual scene sampling started - Not Recording!
08:09:47.59	USH	-	-	-	-	Idling
08:09:49.32	USH	-	-	-	-	Manual scene sampling started - Not Recording!
08:09:50.16	USH	-	-	-	-	Idling
08:09:54.47	---	-	-	-	-	Reset shutters.
08:09:58.71	LSH	-	-	-	-	Dark measurement started.
08:09:58.71	USH	-	-	-	-	Dark measurement started.
08:09:58.71	SWS	-	-	-	-	Dark measurement started.
08:09:59.73	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:10:00.48	USH	-	-	-	-	Idling
08:10:00.55	SWS	-	-	-	-	Idling
08:10:01.60	USH	-	-	-	-	Dark measurement started.
08:10:01.62	SWS	-	-	-	-	Dark measurement started.
08:10:03.17	USH	-	-	-	-	Idling
08:10:03.24	SWS	-	-	-	-	Idling
08:10:03.67	SWS	-	-	-	-	Dark measurement started.
08:10:03.67	USH	-	-	-	-	Dark measurement started.
08:10:05.11	SWS	-	-	-	-	Idling
08:10:05.30	USH	-	-	-	-	Idling
08:10:05.39	LSH	-	-	-	-	Idling
08:10:08.17	LSH	-	-	-	-	Manual scene recording started.
08:10:08.18	USH	-	-	-	-	Manual scene recording started.
08:10:08.19	SWS	-	-	-	-	Manual scene recording started.
08:14:47.30	---	-	-	-	-	*** Freezet temp 10 deg C
08:16:31.47	LSH	-	-	-	-	Idling

08:16:31.90	SWS	-	-	-	-	Idling
08:16:31.95	USH	-	-	-	-	Idling
08:16:33.58	---	-	-	-	-	Reset shutters.
08:16:44.33	USH	-	-	-	-	Dark measurement started.
08:16:44.35	SWS	-	-	-	-	Dark measurement started.
08:16:44.36	LSH	-	-	-	-	Dark measurement started.
08:16:45.58	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:16:45.79	USH	-	-	-	-	Idling
08:16:45.99	SWS	-	-	-	-	Idling
08:16:47.41	SWS	-	-	-	-	Dark measurement started.
08:16:47.41	USH	-	-	-	-	Dark measurement started.
08:16:48.85	SWS	-	-	-	-	Idling
08:16:49.06	USH	-	-	-	-	Idling
08:16:51.21	LSH	-	-	-	-	Idling
08:16:56.20	SWS	-	-	100	-	VIS int.time changed from 45ms to 100ms.
08:16:59.22	SWS	-	-	-	-	Dark measurement started.
08:17:00.89	SWS	-	-	-	-	Idling
08:17:03.74	USH	-	-	-	-	Dark measurement started.
08:17:03.75	LSH	-	-	-	-	Dark measurement started.
08:17:03.76	SWS	-	-	-	-	Dark measurement started.
08:17:04.77	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:17:05.19	USH	-	-	-	-	Idling
08:17:05.60	SWS	-	-	-	-	Idling
08:17:07.72	SWS	-	100	-	-	Sample period changed from 1000ms to 100ms.
08:17:10.34	USH	-	100	-	-	Sample period changed from 1000ms to 100ms.
08:17:10.41	LSH	-	-	-	-	Idling
08:17:13.15	LSH	-	100	-	-	Sample period changed from 1000ms to 100ms.
08:17:28.27	SWS	174.0	-	-	-	Telescope sent to 0.000
08:17:29.95	SWS	0.1	-	-	-	Telescope stopped.
08:17:33.06	SWS	0.0	-	-	-	Telescope sent to 0.000
08:17:39.54	USH	-	-	-	-	Manual scene recording started.
08:17:39.54	LSH	-	-	-	-	Manual scene recording started.
08:17:39.56	SWS	-	-	-	-	Manual scene recording started.
08:18:40.23	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:18:41.06	SWS	-	-	-	-	Idling
08:18:42.80	SWS	-	-	-	-	Dark measurement started.
08:18:44.25	SWS	-	-	-	-	Idling
08:18:45.39	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
08:18:47.41	SWS	-	-	200	-	VIS int.time changed from 100ms to 200ms.
08:18:47.42	SWS	-	-	-	200	NIR int.time changed from 100ms to 200ms.
08:18:48.92	SWS	-	-	-	-	Dark measurement started.
08:18:51.83	SWS	-	-	-	-	Idling
08:18:53.35	SWS	-	-	-	-	Manual scene recording started.
08:19:10.34	USH	-	-	-	-	Idling
08:19:10.36	SWS	-	-	-	-	Idling
08:19:10.84	LSH	-	-	-	-	Idling
08:19:14.43	SWS	-	-	-	-	Dark measurement started.
08:19:14.43	LSH	-	-	-	-	Dark measurement started.
08:19:14.44	USH	-	-	-	-	Dark measurement started.
08:19:15.46	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:19:16.27	USH	-	-	-	-	Idling
08:19:16.89	SWS	-	-	-	-	Idling
08:19:21.09	LSH	-	-	-	-	Idling
08:19:21.21	---	-	-	-	-	Reset shutters.
08:19:25.97	SWS	-	-	-	-	Dark measurement started.
08:19:25.98	LSH	-	-	-	-	Dark measurement started.
08:19:25.99	USH	-	-	-	-	Dark measurement started.
08:19:27.00	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:19:27.82	USH	-	-	-	-	Idling
08:19:28.42	SWS	-	-	-	-	Idling
08:19:32.63	LSH	-	-	-	-	Idling
08:20:08.00	USH	-	-	-	-	Manual scene recording started.
08:20:08.00	LSH	-	-	-	-	Manual scene recording started.
08:20:08.02	SWS	-	-	-	-	Manual scene recording started.
08:22:14.04	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:22:14.96	SWS	-	-	-	-	Idling
08:22:16.56	SWS	-	-	-	-	Dark measurement started.
08:22:18.99	SWS	-	-	-	-	Idling
08:22:19.61	SWS	-	-	-	200	NIR int.time changed from 200ms to 200ms.

08:22:24.66	SWS	-	-	50	-	VIS int.time changed from 200ms to 50ms.
08:22:28.41	SWS	-	-	-	100	NIR int.time changed from 200ms to 100ms.
08:22:29.60	SWS	-	-	-	-	Dark measurement started.
08:22:31.53	SWS	-	-	-	-	Idling
08:22:31.96	SWS	-0.0	-	-	-	Telescope sent to 180.000
08:22:33.66	SWS	178.0	-	-	-	Telescope stopped.
08:22:34.62	SWS	180.0	-	-	-	Telescope sent to 180.000
08:22:38.76	SWS	-	-	-	-	Manual scene recording started.
08:24:47.73	SWS	-	-	-	-	Idling
08:24:47.75	LSH	-	-	-	-	Idling
08:24:47.78	USH	-	-	-	-	Idling
08:24:50.44	USH	-	-	-	-	Dark measurement started.
08:24:50.45	LSH	-	-	-	-	Dark measurement started.
08:24:50.45	SWS	-	-	-	-	Dark measurement started.
08:24:51.50	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:24:51.89	USH	-	-	-	-	Idling
08:24:52.30	SWS	-	-	-	-	Idling
08:24:55.13	SWS	-	-	200	-	VIS int.time changed from 50ms to 200ms.
08:24:56.66	SWS	-	-	-	200	NIR int.time changed from 100ms to 200ms.
08:24:57.12	LSH	-	-	-	-	Idling
08:24:58.35	SWS	-	-	-	-	Dark measurement started.
08:25:01.27	SWS	-	-	-	-	Idling
08:25:01.85	SWS	180.0	-	-	-	Telescope sent to 0.000
08:25:03.54	SWS	2.1	-	-	-	Telescope stopped.
08:25:05.06	SWS	0.0	-	-	-	Telescope sent to 0.000
08:25:06.64	SWS	-	-	-	-	Manual scene recording started.
08:25:06.65	LSH	-	-	-	-	Manual scene recording started.
08:25:06.67	USH	-	-	-	-	Manual scene recording started.
08:27:26.54	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:27:27.47	SWS	-	-	-	-	Idling
08:27:28.10	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:27:29.04	SWS	-	-	-	-	Idling
08:27:30.24	SWS	-	-	-	-	Dark measurement started.
08:27:32.69	SWS	-	-	-	-	Idling
08:27:35.14	SWS	-	-	-	200	NIR int.time changed from 200ms to 200ms.
08:27:37.25	SWS	-	-	50	-	VIS int.time changed from 200ms to 50ms.
08:27:40.06	SWS	-	-	-	100	NIR int.time changed from 200ms to 100ms.
08:27:41.33	SWS	-	-	-	-	Dark measurement started.
08:27:43.28	SWS	-	-	-	-	Idling
08:27:45.17	SWS	0.0	-	-	-	Telescope sent to 180.000
08:27:46.88	SWS	178.6	-	-	-	Telescope stopped.
08:27:47.76	SWS	180.0	-	-	-	Telescope sent to 180.000
08:27:49.83	SWS	-	-	-	-	Manual scene recording started.
08:30:10.99	LSH	-	-	-	-	Idling
08:30:11.05	SWS	-	-	-	-	Idling
08:30:11.06	USH	-	-	-	-	Idling
08:30:14.80	---	-	-	-	-	Reset shutters.
08:30:18.50	SWS	-	-	-	-	Dark measurement started.
08:30:19.94	SWS	-	-	-	-	Idling
08:30:25.66	SWS	180.0	-	-	-	Telescope sent to 0.000
08:30:27.34	SWS	2.8	-	-	-	Telescope stopped.
08:30:28.24	SWS	0.0	-	-	-	Telescope sent to 0.000
08:30:32.18	SWS	-	-	200	-	VIS int.time changed from 50ms to 200ms.
08:30:33.20	SWS	-	-	-	200	NIR int.time changed from 100ms to 200ms.
08:30:39.90	---	-	-	-	-	Reset shutters.
08:30:43.38	SWS	-	-	-	-	Dark measurement started.
08:30:43.39	LSH	-	-	-	-	Dark measurement started.
08:30:43.41	USH	-	-	-	-	Dark measurement started.
08:30:44.68	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:30:45.30	USH	-	-	-	-	Idling
08:30:46.29	SWS	-	-	-	-	Idling
08:30:47.22	SWS	-	-	-	-	Dark measurement started.
08:30:47.22	USH	-	-	-	-	Dark measurement started.
08:30:48.88	USH	-	-	-	-	Idling
08:30:49.66	SWS	-	-	-	-	Idling
08:30:50.33	LSH	-	-	-	-	Idling
08:30:50.52	SWS	-	-	-	-	Dark measurement started.
08:30:50.52	LSH	-	-	-	-	Dark measurement started.
08:30:50.53	USH	-	-	-	-	Dark measurement started.

08:30:52.38	USH	-	-	-	-	Idling
08:30:52.97	SWS	-	-	-	-	Idling
08:30:57.18	LSH	-	-	-	-	Idling
08:31:19.08	---	-	-	-	-	*** Freezer temp 11 deeg C
08:31:27.11	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:31:27.11	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
08:31:27.12	USH	-	-	-	-	Manual scene sampling started - Not Recording!
08:33:13.79	SWS	-	-	-	-	Dark measurement started.
08:33:14.21	USH	-	-	-	-	Dark measurement started.
08:33:14.29	LSH	-	-	-	-	Dark measurement started.
08:33:15.24	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:33:15.66	USH	-	-	-	-	Manual scene sampling started - Not Recording!
08:33:16.25	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:33:17.73	USH	-	-	-	-	Dark measurement started.
08:33:17.89	SWS	-	-	-	-	Dark measurement started.
08:33:19.16	USH	-	-	-	-	Manual scene sampling started - Not Recording!
08:33:20.36	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:33:20.88	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
08:33:24.89	SWS	-	-	-	-	Idling
08:33:26.82	USH	-	-	-	-	Idling
08:33:28.93	LSH	-	-	-	-	Idling
08:33:30.92	USH	-	-	-	-	Dark measurement started.
08:33:30.94	SWS	-	-	-	-	Dark measurement started.
08:33:30.96	LSH	-	-	-	-	Dark measurement started.
08:33:32.14	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:33:32.36	USH	-	-	-	-	Idling
08:33:33.56	SWS	-	-	-	-	Idling
08:33:37.77	LSH	-	-	-	-	Idling
08:33:42.75	SWS	0.0	-	-	-	Telescope sent to 0.000
08:35:17.22	SWS	-	-	-	-	Dark measurement started.
08:35:17.22	LSH	-	-	-	-	Dark measurement started.
08:35:17.23	USH	-	-	-	-	Dark measurement started.
08:35:18.25	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:35:19.06	USH	-	-	-	-	Idling
08:35:19.65	SWS	-	-	-	-	Idling
08:35:23.87	LSH	-	-	-	-	Idling
08:36:15.92	USH	-	-	-	-	Dark measurement started.
08:36:15.92	LSH	-	-	-	-	Dark measurement started.
08:36:15.92	SWS	-	-	-	-	Dark measurement started.
08:36:16.94	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:36:17.35	USH	-	-	-	-	Idling
08:36:18.75	SWS	-	-	-	-	Idling
08:36:19.88	SWS	-	-	-	-	Dark measurement started.
08:36:19.88	USH	-	-	-	-	Dark measurement started.
08:36:21.52	USH	-	-	-	-	Idling
08:36:22.32	SWS	-	-	-	-	Idling
08:36:22.56	LSH	-	-	-	-	Idling
08:37:09.69	LSH	-	-	-	-	Manual scene recording started.
08:37:09.70	USH	-	-	-	-	Manual scene recording started.
08:37:09.71	SWS	-	-	-	-	Manual scene recording started.
08:37:16.80	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:39:17.72	SWS	-	-	-	-	Idling
08:39:21.59	SWS	0.0	-	-	-	Telescope sent to 180.000
08:39:22.51	SWS	-	-	-	-	Dark measurement started.
08:39:23.32	SWS	179.7	-	-	-	Telescope stopped.
08:39:24.94	SWS	-	-	-	-	Idling
08:39:27.63	SWS	-	-	50	-	VIS int.time changed from 200ms to 50ms.
08:39:27.64	SWS	-	-	-	50	NIR int.time changed from 200ms to 50ms.
08:39:28.83	SWS	-	-	-	50	NIR int.time changed from 50ms to 50ms.
08:39:31.22	SWS	-	-	-	100	NIR int.time changed from 50ms to 100ms.
08:39:34.28	SWS	180.0	-	-	-	Telescope sent to 180.000
08:39:36.83	SWS	-	-	-	-	Dark measurement started.
08:39:39.07	SWS	-	-	-	-	Idling
08:39:39.60	SWS	-	-	-	-	Manual scene recording started.
08:41:41.95	SWS	-	-	-	-	Idling
08:41:41.96	USH	-	-	-	-	Idling
08:41:42.32	LSH	-	-	-	-	Idling
08:41:44.15	SWS	-	-	-	-	Dark measurement started.
08:41:44.16	LSH	-	-	-	-	Dark measurement started.

08:41:44.17	USH	-	-	-	-	Dark measurement started.
08:41:45.18	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:41:45.59	SWS	-	-	-	-	Idling
08:41:45.85	SWS	180.0	-	-	-	Telescope sent to 0.000
08:41:46.02	USH	-	-	-	-	Idling
08:41:47.56	SWS	1.4	-	-	-	Telescope stopped.
08:41:50.81	LSH	-	-	-	-	Idling
08:41:51.62	SWS	-	-	200	-	VIS int.time changed from 50ms to 200ms.
08:41:52.52	SWS	-	-	-	200	NIR int.time changed from 100ms to 200ms.
08:41:54.49	SWS	-	-	-	-	Dark measurement started.
08:41:57.40	SWS	-	-	-	-	Idling
08:41:58.06	SWS	0.0	-	-	-	Telescope sent to 0.000
08:41:59.79	LSH	-	-	-	-	Manual scene recording started.
08:41:59.79	USH	-	-	-	-	Manual scene recording started.
08:41:59.81	SWS	-	-	-	-	Manual scene recording started.
08:44:04.73	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:44:05.66	SWS	-	-	-	-	Idling
08:44:07.52	SWS	-	-	-	-	Dark measurement started.
08:44:09.97	SWS	-	-	-	-	Idling
08:44:10.83	SWS	0.0	-	-	-	Telescope sent to 180.000
08:44:12.53	SWS	178.1	-	-	-	Telescope stopped.
08:44:13.39	SWS	-	-	50	-	VIS int.time changed from 200ms to 50ms.
08:44:13.40	SWS	-	-	-	50	NIR int.time changed from 200ms to 50ms.
08:44:15.47	SWS	-	-	-	50	NIR int.time changed from 50ms to 50ms.
08:44:17.91	SWS	-	-	-	100	NIR int.time changed from 50ms to 100ms.
08:44:18.87	SWS	-	-	-	-	Dark measurement started.
08:44:20.82	SWS	-	-	-	-	Idling
08:44:20.89	SWS	180.0	-	-	-	Telescope sent to 180.000
08:44:22.25	SWS	-	-	-	-	Manual scene recording started.
08:46:25.95	SWS	-	-	-	-	Idling
08:46:25.96	USH	-	-	-	-	Idling
08:46:26.33	LSH	-	-	-	-	Idling
08:46:28.06	SWS	-	-	-	-	Dark measurement started.
08:46:28.07	LSH	-	-	-	-	Dark measurement started.
08:46:28.08	USH	-	-	-	-	Dark measurement started.
08:46:29.09	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:46:29.52	SWS	-	-	-	-	Idling
08:46:29.95	USH	-	-	-	-	Idling
08:46:32.07	SWS	-	-	-	50	NIR int.time changed from 100ms to 50ms.
08:46:34.73	LSH	-	-	-	-	Idling
08:46:35.64	SWS	-	-	200	-	VIS int.time changed from 50ms to 200ms.
08:46:35.65	SWS	-	-	-	200	NIR int.time changed from 50ms to 200ms.
08:46:37.01	SWS	-	-	-	-	Dark measurement started.
08:46:39.25	SWS	180.0	-	-	-	Telescope sent to 0.000
08:46:39.92	SWS	-	-	-	-	Idling
08:46:40.92	SWS	3.3	-	-	-	Telescope stopped.
08:46:41.91	SWS	0.0	-	-	-	Telescope sent to 0.000
08:46:43.86	SWS	-	-	-	-	Manual scene recording started.
08:46:43.88	LSH	-	-	-	-	Manual scene recording started.
08:46:43.88	USH	-	-	-	-	Manual scene recording started.
08:47:14.94	SWS	-	-	-	-	Idling
08:47:14.96	USH	-	-	-	-	Idling
08:47:15.27	LSH	-	-	-	-	Idling
08:47:22.94	SWS	-	-	-	-	Dark measurement started.
08:47:22.95	LSH	-	-	-	-	Dark measurement started.
08:47:22.97	USH	-	-	-	-	Dark measurement started.
08:47:23.96	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:47:24.80	USH	-	-	-	-	Idling
08:47:25.39	SWS	-	-	-	-	Idling
08:47:29.60	LSH	-	-	-	-	Idling
08:47:30.22	USH	-	-	-	-	Dark measurement started.
08:47:30.23	LSH	-	-	-	-	Dark measurement started.
08:47:30.24	SWS	-	-	-	-	Dark measurement started.
08:47:31.67	USH	-	-	-	-	Idling
08:47:32.59	USH	-	-	-	-	Manual scene sampling started - Not Recording!
08:47:33.07	SWS	-	-	-	-	Idling
08:47:36.87	LSH	-	-	-	-	Idling
08:48:12.82	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
08:48:12.84	SWS	-	-	-	-	Manual scene sampling started - Not Recording!

08:49:31.58	LSH	-	-	-	-	Idling
08:49:31.68	USH	-	-	-	-	Idling
08:49:31.95	SWS	-	-	-	-	Idling
08:49:33.28	---	-	-	-	-	Reset shutters.
08:49:38.28	SWS	-	-	-	-	Dark measurement started.
08:49:38.28	LSH	-	-	-	-	Dark measurement started.
08:49:38.29	USH	-	-	-	-	Dark measurement started.
08:49:39.31	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:49:40.12	USH	-	-	-	-	Idling
08:49:40.72	SWS	-	-	-	-	Idling
08:49:40.97	SWS	-	-	-	-	Dark measurement started.
08:49:40.97	USH	-	-	-	-	Dark measurement started.
08:49:42.61	USH	-	-	-	-	Idling
08:49:43.42	SWS	-	-	-	-	Idling
08:49:44.94	LSH	-	-	-	-	Idling
08:51:11.08	USH	-	-	-	-	Dark measurement started.
08:51:11.09	LSH	-	-	-	-	Dark measurement started.
08:51:11.10	SWS	-	-	-	-	Dark measurement started.
08:51:12.45	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:51:12.95	USH	-	-	-	-	Idling
08:51:14.09	SWS	-	-	-	-	Idling
08:51:14.95	SWS	-	-	-	-	Dark measurement started.
08:51:14.95	USH	-	-	-	-	Dark measurement started.
08:51:16.60	USH	-	-	-	-	Idling
08:51:17.40	SWS	-	-	-	-	Idling
08:51:18.75	LSH	-	-	-	-	Idling
08:52:12.44	USH	-	-	-	-	Manual scene recording started.
08:52:12.46	LSH	-	-	-	-	Manual scene recording started.
08:52:12.46	SWS	-	-	-	-	Manual scene recording started.
08:54:15.56	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:54:16.50	SWS	-	-	-	-	Idling
08:54:17.77	SWS	-	-	-	-	Dark measurement started.
08:54:19.92	SWS	-0.0	-	-	-	Telescope sent to 0.000
08:54:20.22	SWS	-	-	-	-	Idling
08:54:23.26	SWS	-	-	50	-	VIS int.time changed from 200ms to 50ms.
08:54:23.27	SWS	-	-	-	50	NIR int.time changed from 200ms to 50ms.
08:54:24.62	SWS	-	-	-	50	NIR int.time changed from 50ms to 50ms.
08:54:26.68	SWS	-	-	-	100	NIR int.time changed from 50ms to 100ms.
08:54:28.40	SWS	-	-	-	-	Dark measurement started.
08:54:30.32	SWS	0.0	-	-	-	Telescope sent to 0.000
08:54:30.37	SWS	-	-	-	-	Idling
08:54:31.37	SWS	-	-	-	-	Manual scene recording started.
08:54:50.57	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:54:55.13	SWS	-	-	-	-	Dark measurement started.
08:54:56.61	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:54:58.22	SWS	-	-	-	50	NIR int.time changed from 100ms to 50ms.
08:55:00.41	SWS	-	-	200	-	VIS int.time changed from 50ms to 200ms.
08:55:00.42	SWS	-	-	-	200	NIR int.time changed from 50ms to 200ms.
08:55:03.28	SWS	-	-	100	-	VIS int.time changed from 200ms to 100ms.
08:55:03.29	SWS	-	-	-	100	NIR int.time changed from 200ms to 100ms.
08:55:09.91	SWS	-	-	200	-	VIS int.time changed from 100ms to 200ms.
08:55:09.92	SWS	-	-	-	200	NIR int.time changed from 100ms to 200ms.
08:55:11.93	SWS	-	-	-	-	Dark measurement started.
08:55:14.39	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:55:17.48	SWS	-	-	-	-	Manual scene recording started.
08:56:13.01	SWS	-0.0	-	-	-	Telescope sent to 180.000
08:56:13.42	SWS	-	-	-	-	Warning: Clipping may be occurring.
08:56:14.73	SWS	179.5	-	-	-	Telescope stopped.
08:56:16.34	SWS	-	-	-	-	Warning: Clipping may be occurring.
08:56:18.35	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
08:56:19.29	SWS	-	-	-	-	Idling
08:56:24.65	SWS	-	-	50	-	VIS int.time changed from 200ms to 50ms.
08:56:24.67	SWS	-	-	-	50	NIR int.time changed from 200ms to 50ms.
08:56:26.43	SWS	-	-	-	50	NIR int.time changed from 50ms to 50ms.
08:56:29.02	SWS	-	-	-	100	NIR int.time changed from 50ms to 100ms.
08:56:30.15	SWS	-	-	-	-	Dark measurement started.
08:56:32.12	SWS	-	-	-	-	Idling
08:56:33.09	SWS	-	-	-	-	Manual scene recording started.
08:57:12.11	---	-	-	-	-	*** Freezer temp 11 deg C



08:58:36.93	SWS	-	-	-	-	Idling
08:58:36.96	USH	-	-	-	-	Idling
08:58:36.99	LSH	-	-	-	-	Idling
08:58:39.79	SWS	-	-	-	-	Dark measurement started.
08:58:39.79	LSH	-	-	-	-	Dark measurement started.
08:58:39.80	USH	-	-	-	-	Dark measurement started.
08:58:40.82	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
08:58:41.24	SWS	-	-	-	-	Idling
08:58:41.66	USH	-	-	-	-	Idling
08:58:41.71	SWS	180.0	-	-	-	Telescope sent to 0.000
08:58:43.42	SWS	0.5	-	-	-	Telescope stopped.
08:58:44.36	SWS	-	-	-	50	NIR int.time changed from 100ms to 50ms.
08:58:46.45	LSH	-	-	-	-	Idling
08:58:49.25	SWS	-	-	200	-	VIS int.time changed from 50ms to 200ms.
08:58:49.25	SWS	-	-	-	200	NIR int.time changed from 50ms to 200ms.
08:58:52.03	SWS	-	-	-	-	Dark measurement started.
08:58:54.94	SWS	-	-	-	-	Idling
08:58:56.05	SWS	0.0	-	-	-	Telescope sent to 0.000
08:58:58.37	USH	-	-	-	-	Manual scene recording started.
08:58:58.37	LSH	-	-	-	-	Manual scene recording started.
08:58:58.39	SWS	-	-	-	-	Manual scene recording started.
08:59:56.17	LSH	-	-	-	-	Idling
08:59:56.20	SWS	-	-	-	-	Idling
08:59:56.23	USH	-	-	-	-	Idling
09:00:10.71	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:00:11.63	SWS	-	-	-	-	Idling
09:00:13.87	SWS	-0.0	-	-	-	Telescope sent to 180.000
09:00:14.77	SWS	79.2	-	-	-	Telescope stopped.
09:00:16.01	SWS	-	-	-	-	Dark measurement started.
09:00:18.45	SWS	-	-	-	-	Idling
09:00:23.27	SWS	-	-	50	-	VIS int.time changed from 200ms to 50ms.
09:00:23.28	SWS	-	-	-	50	NIR int.time changed from 200ms to 50ms.
09:00:24.98	SWS	-	-	-	50	NIR int.time changed from 50ms to 50ms.
09:00:27.77	SWS	-	-	-	100	NIR int.time changed from 50ms to 100ms.
09:00:29.41	SWS	-	-	-	-	Dark measurement started.
09:00:31.33	SWS	-	-	-	-	Idling
09:00:32.31	SWS	-	-	-	-	Manual scene recording started.
09:00:35.26	SWS	79.2	-	-	-	Telescope sent to 180.000
09:00:35.60	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:00:36.40	SWS	180.0	-	-	-	Telescope stopped.
09:00:40.08	SWS	180.0	-	-	-	Telescope sent to 180.000
09:02:14.73	SWS	-	-	-	-	Idling
09:02:18.02	---	-	-	-	-	Reset shutters.
09:02:22.11	USH	-	-	-	-	Dark measurement started.
09:02:22.11	LSH	-	-	-	-	Dark measurement started.
09:02:22.12	SWS	-	-	-	-	Dark measurement started.
09:02:23.47	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:02:23.98	USH	-	-	-	-	Idling
09:02:24.13	SWS	-	-	-	-	Idling
09:02:25.40	SWS	-	-	-	-	Dark measurement started.
09:02:25.41	USH	-	-	-	-	Dark measurement started.
09:02:26.86	SWS	-	-	-	-	Idling
09:02:27.07	USH	-	-	-	-	Idling
09:02:27.64	SWS	-	-	-	-	Dark measurement started.
09:02:27.65	USH	-	-	-	-	Dark measurement started.
09:02:29.10	SWS	-	-	-	-	Idling
09:02:29.10	LSH	-	-	-	-	Idling
09:02:29.29	USH	-	-	-	-	Idling
09:02:33.30	SWS	180.0	-	-	-	Telescope sent to 0.000
09:02:35.01	SWS	1.3	-	-	-	Telescope stopped.
09:02:37.02	SWS	0.0	-	-	-	Telescope sent to 0.000
09:02:42.34	SWS	-	-	-	50	NIR int.time changed from 100ms to 50ms.
09:02:47.24	SWS	-	-	200	-	VIS int.time changed from 50ms to 200ms.
09:02:47.25	SWS	-	-	-	200	NIR int.time changed from 50ms to 200ms.
09:02:51.88	SWS	-	-	-	-	Dark measurement started.
09:02:54.81	SWS	-	-	-	-	Idling
09:02:55.23	SWS	-	-	-	-	Dark measurement started.
09:02:55.23	LSH	-	-	-	-	Dark measurement started.
09:02:55.24	USH	-	-	-	-	Dark measurement started.

09:02:56.26	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:02:57.07	USH	-	-	-	-	Idling
09:02:57.67	SWS	-	-	-	-	Idling
09:02:59.86	SWS	-	-	-	-	Dark measurement started.
09:02:59.87	USH	-	-	-	-	Dark measurement started.
09:03:01.52	USH	-	-	-	-	Idling
09:03:01.89	LSH	-	-	-	-	Idling
09:03:02.33	SWS	-	-	-	-	Idling
09:03:08.44	USH	-	-	-	-	Manual scene sampling started - Not Recording!
09:03:08.44	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
09:03:08.45	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:05:29.88	SWS	-	-	-	-	Idling
09:05:29.90	USH	-	-	-	-	Idling
09:05:30.22	LSH	-	-	-	-	Idling
09:05:31.65	SWS	-	-	-	-	Dark measurement started.
09:05:31.65	LSH	-	-	-	-	Dark measurement started.
09:05:31.66	USH	-	-	-	-	Dark measurement started.
09:05:32.68	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:05:33.50	USH	-	-	-	-	Idling
09:05:34.09	SWS	-	-	-	-	Idling
09:05:36.22	SWS	-	-	-	-	Dark measurement started.
09:05:36.22	USH	-	-	-	-	Dark measurement started.
09:05:37.87	USH	-	-	-	-	Idling
09:05:38.31	LSH	-	-	-	-	Idling
09:05:38.67	SWS	-	-	-	-	Idling
09:05:43.03	USH	-	-	-	-	Manual scene sampling started - Not Recording!
09:05:43.04	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:05:43.04	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
09:07:02.19	LSH	-	-	-	-	Manual scene recording started.
09:07:02.21	SWS	-	-	-	-	Manual scene recording started.
09:07:02.27	USH	-	-	-	-	Manual scene recording started.
09:08:34.46	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:08:35.40	SWS	-	-	-	-	Idling
09:08:37.41	SWS	0.0	-	-	-	Telescope sent to 180.000
09:08:39.12	SWS	178.7	-	-	-	Telescope stopped.
09:08:40.57	SWS	180.0	-	-	-	Telescope sent to 180.000
09:08:41.93	SWS	-	-	-	-	Dark measurement started.
09:08:44.37	SWS	-	-	-	-	Idling
09:08:45.35	SWS	-	-	-	200	NIR int.time changed from 200ms to 200ms.
09:08:47.67	SWS	-	-	50	-	VIS int.time changed from 200ms to 50ms.
09:08:49.60	SWS	-	-	-	100	NIR int.time changed from 200ms to 100ms.
09:08:50.99	SWS	-	-	-	-	Dark measurement started.
09:08:52.95	SWS	-	-	-	-	Idling
09:08:53.53	SWS	-	-	-	-	Manual scene recording started.
09:10:25.87	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:10:26.70	SWS	-	-	-	-	Idling
09:10:28.35	SWS	180.0	-	-	-	Telescope sent to 0.000
09:10:30.07	SWS	0.8	-	-	-	Telescope stopped.
09:10:30.96	SWS	-0.0	-	-	-	Telescope sent to 0.000
09:10:32.05	SWS	-	-	-	-	Dark measurement started.
09:10:33.48	SWS	-	-	-	-	Idling
09:10:36.63	SWS	-	-	200	-	VIS int.time changed from 50ms to 200ms.
09:10:37.52	SWS	-	-	-	200	NIR int.time changed from 100ms to 200ms.
09:10:38.34	SWS	-	-	-	-	Dark measurement started.
09:10:41.25	SWS	-	-	-	-	Idling
09:10:41.72	SWS	-	-	-	-	Manual scene recording started.
09:12:24.35	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:12:25.29	SWS	-	-	-	-	Idling
09:12:26.52	SWS	-	-	-	-	Dark measurement started.
09:12:28.39	SWS	0.0	-	-	-	Telescope sent to 180.000
09:12:28.97	SWS	-	-	-	-	Idling
09:12:30.11	SWS	179.2	-	-	-	Telescope stopped.
09:12:30.44	SWS	180.0	-	-	-	Telescope sent to 180.000
09:12:33.93	SWS	-	-	50	-	VIS int.time changed from 200ms to 50ms.
09:12:33.94	SWS	-	-	-	50	NIR int.time changed from 200ms to 50ms.
09:12:35.20	SWS	-	-	-	50	NIR int.time changed from 50ms to 50ms.
09:12:37.33	SWS	-	-	-	100	NIR int.time changed from 50ms to 100ms.
09:12:38.66	SWS	-	-	-	-	Dark measurement started.
09:12:40.60	SWS	-	-	-	-	Idling

09:12:41.26	SWS	-	-	-	-	Manual scene recording started.
09:12:46.51	USH	-	-	-	-	Manual scene sampling started - Not Recording!
09:12:47.34	USH	-	-	-	-	Idling
09:12:48.35	USH	-	-	-	-	Dark measurement started.
09:12:49.79	USH	-	-	-	-	Idling
09:12:50.33	USH	-	-	-	-	Manual scene recording started.
09:12:52.48	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
09:12:53.82	LSH	-	-	-	-	Idling
09:12:53.96	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
09:12:55.29	LSH	-	-	-	-	Idling
09:12:56.29	LSH	-	-	-	-	Dark measurement started.
09:12:57.12	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:13:02.75	LSH	-	-	-	-	Idling
09:13:03.17	LSH	-	-	-	-	Manual scene recording started.
09:14:27.79	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:14:28.64	SWS	-	-	-	-	Idling
09:14:29.14	SWS	-	-	-	-	Dark measurement started.
09:14:30.57	SWS	-	-	-	-	Idling
09:14:32.54	SWS	-	-	-	50	NIR int.time changed from 100ms to 50ms.
09:14:34.34	SWS	-	-	100	-	VIS int.time changed from 50ms to 100ms.
09:14:34.35	SWS	-	-	-	100	NIR int.time changed from 50ms to 100ms.
09:14:39.77	SWS	180.0	-	-	-	Telescope sent to 0.000
09:14:41.47	SWS	1.3	-	-	-	Telescope stopped.
09:14:42.60	SWS	0.0	-	-	-	Telescope sent to 0.000
09:14:44.49	SWS	-	-	-	-	Manual scene recording started.
09:16:22.17	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:17:02.48	SWS	-	-	-	-	Idling
09:17:02.51	USH	-	-	-	-	Idling
09:17:02.95	LSH	-	-	-	-	Idling
09:17:05.23	---	-	-	-	-	Reset shutters.
09:17:09.31	SWS	-	-	-	-	Dark measurement started.
09:17:09.32	LSH	-	-	-	-	Dark measurement started.
09:17:09.33	USH	-	-	-	-	Dark measurement started.
09:17:10.34	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:17:10.76	SWS	-	-	-	-	Idling
09:17:11.17	USH	-	-	-	-	Idling
09:17:15.99	LSH	-	-	-	-	Idling
09:17:33.54	SWS	0.0	-	-	-	Telescope sent to 180.000
09:17:35.25	SWS	179.2	-	-	-	Telescope stopped.
09:17:37.81	SWS	180.0	-	-	-	Telescope sent to 180.000
09:19:25.26	LSH	-	-	-	-	Dark measurement started.
09:19:25.27	USH	-	-	-	-	Dark measurement started.
09:19:25.28	SWS	-	-	-	-	Dark measurement started.
09:19:26.30	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:19:27.05	USH	-	-	-	-	Idling
09:19:27.70	SWS	-	-	-	-	Idling
09:19:31.92	LSH	-	-	-	-	Idling
09:19:37.62	SWS	-	-	-	-	Dark measurement started.
09:19:37.63	LSH	-	-	-	-	Dark measurement started.
09:19:37.64	USH	-	-	-	-	Dark measurement started.
09:19:38.66	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:19:39.07	SWS	-	-	-	-	Idling
09:19:39.48	USH	-	-	-	-	Idling
09:19:44.28	LSH	-	-	-	-	Idling
09:20:37.65	---	-	-	-	-	*** Freezer temp 11 deg C
09:20:49.00	USH	-	-	-	-	Dark measurement started.
09:20:49.01	LSH	-	-	-	-	Dark measurement started.
09:20:49.04	SWS	-	-	-	-	Dark measurement started.
09:20:50.23	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:20:50.45	USH	-	-	-	-	Idling
09:20:50.64	SWS	-	-	-	-	Idling
09:20:51.12	SWS	-	-	-	-	Dark measurement started.
09:20:51.13	USH	-	-	-	-	Dark measurement started.
09:20:52.57	SWS	-	-	-	-	Idling
09:20:52.77	USH	-	-	-	-	Idling
09:20:54.90	SWS	-	-	-	-	Dark measurement started.
09:20:54.91	USH	-	-	-	-	Dark measurement started.
09:20:55.87	LSH	-	-	-	-	Idling
09:20:56.35	SWS	-	-	-	-	Idling

09:20:56.55	USH	-	-	-	-	Idling
09:21:33.95	SWS	-	-	-	-	Dark measurement started.
09:21:33.97	LSH	-	-	-	-	Dark measurement started.
09:21:33.97	USH	-	-	-	-	Dark measurement started.
09:21:35.00	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:21:35.42	SWS	-	-	-	-	Idling
09:21:35.83	USH	-	-	-	-	Idling
09:21:36.19	SWS	-	-	-	-	Dark measurement started.
09:21:36.19	USH	-	-	-	-	Dark measurement started.
09:21:37.64	SWS	-	-	-	-	Idling
09:21:37.84	USH	-	-	-	-	Idling
09:21:38.65	SWS	-	-	-	-	Dark measurement started.
09:21:38.65	USH	-	-	-	-	Dark measurement started.
09:21:40.11	SWS	-	-	-	-	Idling
09:21:40.29	USH	-	-	-	-	Idling
09:21:40.63	LSH	-	-	-	-	Idling
09:21:45.05	---	-	-	-	-	Reset shutters.
09:21:51.55	---	-	-	-	-	Reset shutters.
09:22:18.99	SWS	-	-	-	-	Manual scene recording started.
09:22:19.00	LSH	-	-	-	-	Manual scene recording started.
09:22:19.01	USH	-	-	-	-	Manual scene recording started.
09:23:54.43	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:23:55.25	SWS	-	-	-	-	Idling
09:23:57.40	SWS	180.0	-	-	-	Telescope sent to 0.000
09:23:59.11	SWS	0.9	-	-	-	Telescope stopped.
09:24:00.00	SWS	-0.0	-	-	-	Telescope sent to 0.000
09:24:01.79	SWS	-	-	-	-	Manual scene recording started.
09:24:07.17	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:24:13.00	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:24:25.57	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:24:29.44	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:24:30.88	SWS	-	-	-	-	Dark measurement started.
09:24:32.35	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:24:33.63	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
09:24:35.35	SWS	-	-	50	-	VIS int.time changed from 100ms to 50ms.
09:24:36.54	SWS	-	-	-	-	Dark measurement started.
09:24:37.98	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:24:39.45	SWS	-	-	-	-	Manual scene recording started.
09:25:11.84	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:25:22.28	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:25:25.85	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:25:26.68	SWS	-	-	-	-	Idling
09:25:30.08	SWS	-	-	30	-	VIS int.time changed from 50ms to 30ms.
09:25:33.20	SWS	-	-	-	-	Dark measurement started.
09:25:34.94	SWS	-	-	-	-	Idling
09:25:35.36	SWS	-	-	-	-	Manual scene recording started.
09:26:13.48	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:26:26.80	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:26:29.50	SWS	-	-	-	-	Manual scene recording started.
09:26:40.94	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:26:41.79	SWS	-	-	-	-	Idling
09:26:42.71	SWS	-	-	-	-	Dark measurement started.
09:26:44.14	SWS	-0.0	-	-	-	Telescope sent to 180.000
09:26:44.15	SWS	-	-	-	-	Idling
09:26:45.81	SWS	179.2	-	-	-	Telescope stopped.
09:26:46.73	SWS	180.0	-	-	-	Telescope sent to 180.000
09:26:48.80	SWS	-	-	-	-	Manual scene recording started.
09:26:58.44	USH	-	-	-	-	Manual scene sampling started - Not Recording!
09:26:59.28	USH	-	-	-	-	Idling
09:26:59.98	USH	-	-	-	-	Dark measurement started.
09:27:01.45	USH	-	-	-	-	Idling
09:27:01.90	USH	-	-	-	-	Manual scene recording started.
09:27:03.56	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
09:27:04.91	LSH	-	-	-	-	Idling
09:27:06.28	LSH	-	-	-	-	Dark measurement started.
09:27:07.10	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:27:12.74	LSH	-	-	-	-	Idling
09:27:14.72	LSH	-	-	-	-	Manual scene recording started.
09:28:21.12	SWS	-	-	-	-	Manual scene sampling started - Not Recording!

09:28:21.95	SWS	-	-	-	-	Idling
09:28:25.89	SWS	180.0	-	-	-	Telescope sent to 0.000
09:28:27.60	SWS	0.9	-	-	-	Telescope stopped.
09:28:28.59	SWS	0.0	-	-	-	Telescope sent to 0.000
09:28:30.44	SWS	-	-	-	-	Dark measurement started.
09:28:31.88	SWS	-	-	-	-	Idling
09:28:32.36	SWS	-	-	-	-	Manual scene recording started.
09:30:10.70	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:30:11.54	SWS	-	-	-	-	Idling
09:30:13.29	SWS	-	-	-	-	Dark measurement started.
09:30:14.75	SWS	-	-	-	-	Idling
09:30:16.16	SWS	0.0	-	-	-	Telescope sent to 180.000
09:30:17.90	SWS	179.9	-	-	-	Telescope stopped.
09:30:18.79	SWS	180.0	-	-	-	Telescope sent to 180.000
09:30:19.98	SWS	-	-	-	-	Manual scene recording started.
09:30:33.08	USH	-	-	-	-	Manual scene sampling started - Not Recording!
09:30:33.92	USH	-	-	-	-	Idling
09:30:34.53	USH	-	-	-	-	Dark measurement started.
09:30:35.97	USH	-	-	-	-	Idling
09:30:36.49	USH	-	-	-	-	Manual scene recording started.
09:30:38.58	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
09:30:39.92	LSH	-	-	-	-	Idling
09:30:40.74	LSH	-	-	-	-	Dark measurement started.
09:30:41.57	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:30:47.22	LSH	-	-	-	-	Idling
09:30:47.62	LSH	-	-	-	-	Manual scene recording started.
09:32:09.08	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:32:09.93	SWS	-	-	-	-	Idling
09:32:12.08	SWS	180.0	-	-	-	Telescope sent to 0.000
09:32:13.81	SWS	0.9	-	-	-	Telescope stopped.
09:32:14.87	SWS	0.0	-	-	-	Telescope sent to 0.000
09:32:16.60	SWS	-	-	-	-	Dark measurement started.
09:32:18.04	SWS	-	-	-	-	Idling
09:32:18.52	SWS	-	-	-	-	Manual scene recording started.
09:32:21.63	USH	-	-	-	-	Idling
09:32:21.71	SWS	-	-	-	-	Idling
09:32:22.13	LSH	-	-	-	-	Idling
09:32:36.27	---	-	-	-	-	Reset shutters.
09:32:40.93	SWS	-	-	-	-	Dark measurement started.
09:32:40.93	LSH	-	-	-	-	Dark measurement started.
09:32:40.96	USH	-	-	-	-	Dark measurement started.
09:32:42.16	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:32:42.50	SWS	-	-	-	-	Idling
09:32:42.59	USH	-	-	-	-	Idling
09:32:47.90	LSH	-	-	-	-	Idling
09:34:24.20	SWS	-	-	25	-	VIS int.time changed from 30ms to 25ms.
09:34:25.33	SWS	-	-	-	-	Dark measurement started.
09:34:27.01	SWS	-	-	-	-	Idling
09:34:27.54	USH	-	-	-	-	Dark measurement started.
09:34:27.54	LSH	-	-	-	-	Dark measurement started.
09:34:27.57	SWS	-	-	-	-	Dark measurement started.
09:34:28.79	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:34:29.01	USH	-	-	-	-	Idling
09:34:29.21	SWS	-	-	-	-	Idling
09:34:30.79	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:34:30.79	USH	-	-	-	-	Manual scene sampling started - Not Recording!
09:34:34.42	LSH	-	-	-	-	Idling
09:35:02.27	---	-	-	-	-	*** Freezer temp 13 deg C
09:35:11.54	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
09:35:15.42	USH	-	-	-	-	Dark measurement started.
09:35:15.83	SWS	-	-	-	-	Dark measurement started.
09:35:16.24	LSH	-	-	-	-	Dark measurement started.
09:35:16.88	USH	-	-	-	-	Manual scene sampling started - Not Recording!
09:35:17.07	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:35:17.29	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:35:22.70	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
09:36:32.78	SWS	-	-	-	-	Dark measurement started.
09:36:33.04	USH	-	-	-	-	Dark measurement started.
09:36:33.61	LSH	-	-	-	-	Dark measurement started.

09:36:34.23	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:36:34.43	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:36:34.50	USH	-	-	-	-	Manual scene sampling started - Not Recording!
09:36:35.06	SWS	-	-	-	-	Manual scene recording started.
09:36:35.33	USH	-	-	-	-	Manual scene recording started.
09:36:40.10	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
09:36:43.68	LSH	-	-	-	-	Manual scene recording started.
09:38:15.56	USH	-	-	-	-	Idling
09:38:15.59	SWS	-	-	-	-	Idling
09:38:15.73	LSH	-	-	-	-	Idling
09:38:17.29	SWS	-	-	-	-	Dark measurement started.
09:38:17.30	LSH	-	-	-	-	Dark measurement started.
09:38:17.32	USH	-	-	-	-	Dark measurement started.
09:38:18.33	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:38:18.79	SWS	-	-	-	-	Idling
09:38:19.20	USH	-	-	-	-	Idling
09:38:20.10	SWS	-	-	-	-	Dark measurement started.
09:38:20.11	USH	-	-	-	-	Dark measurement started.
09:38:21.55	SWS	-	-	-	-	Idling
09:38:21.78	USH	-	-	-	-	Idling
09:38:23.95	LSH	-	-	-	-	Idling
09:38:24.66	SWS	-	-	-	-	Dark measurement started.
09:38:24.67	LSH	-	-	-	-	Dark measurement started.
09:38:24.68	USH	-	-	-	-	Dark measurement started.
09:38:26.11	SWS	-	-	-	-	Idling
09:38:26.52	USH	-	-	-	-	Idling
09:38:31.32	LSH	-	-	-	-	Idling
09:39:47.99	USH	-	-	-	-	Dark measurement started.
09:39:48.00	LSH	-	-	-	-	Dark measurement started.
09:39:48.01	SWS	-	-	-	-	Dark measurement started.
09:39:49.36	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:39:49.86	USH	-	-	-	-	Idling
09:39:50.52	SWS	-	-	-	-	Idling
09:39:54.99	LSH	-	-	-	-	Idling
09:39:57.82	SWS	-	-	-	-	Manual scene recording started.
09:39:57.83	LSH	-	-	-	-	Manual scene recording started.
09:39:57.84	USH	-	-	-	-	Manual scene recording started.
09:41:15.54	LSH	-	-	-	-	Idling
09:41:15.57	USH	-	-	-	-	Idling
09:41:15.60	SWS	-	-	-	-	Idling
09:41:17.75	LSH	-	-	-	-	Manual scene recording started.
09:41:17.75	SWS	-	-	-	-	Manual scene recording started.
09:41:17.80	USH	-	-	-	-	Manual scene recording started.
09:42:41.65	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:42:42.48	SWS	-	-	-	-	Idling
09:42:48.06	SWS	-	-	100	-	VIS int.time changed from 25ms to 100ms.
09:42:49.00	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
09:42:49.92	SWS	-	-	-	-	Dark measurement started.
09:42:51.65	SWS	-	-	-	-	Idling
09:42:52.14	SWS	-	-	-	-	Manual scene recording started.
09:43:24.52	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:43:25.36	SWS	-	-	-	-	Idling
09:43:27.37	SWS	0.0	-	-	-	Telescope sent to 180.000
09:43:29.11	SWS	179.8	-	-	-	Telescope stopped.
09:43:30.76	SWS	180.0	-	-	-	Telescope sent to 180.000
09:43:32.65	SWS	-	-	-	-	Dark measurement started.
09:43:34.13	SWS	-	-	-	-	Idling
09:43:34.60	SWS	-	-	-	-	Manual scene recording started.
09:44:06.06	USH	-	-	-	-	Manual scene sampling started - Not Recording!
09:44:06.89	USH	-	-	-	-	Idling
09:44:08.11	USH	-	-	-	-	Dark measurement started.
09:44:09.56	USH	-	-	-	-	Idling
09:44:10.09	USH	-	-	-	-	Manual scene recording started.
09:44:14.03	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
09:44:15.37	LSH	-	-	-	-	Idling
09:44:16.27	LSH	-	-	-	-	Dark measurement started.
09:44:17.10	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:44:22.75	LSH	-	-	-	-	Idling
09:44:23.56	LSH	-	-	-	-	Manual scene recording started.

09:44:59.69	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:45:00.52	SWS	-	-	-	-	Idling
09:45:01.77	SWS	180.0	-	-	-	Telescope sent to 0.000
09:45:03.49	SWS	0.5	-	-	-	Telescope stopped.
09:45:04.38	SWS	0.0	-	-	-	Telescope sent to 0.000
09:45:05.35	SWS	-	-	-	-	Manual scene recording started.
09:46:21.30	SWS	-	-	-	-	Warning: Clipping may be occurring.
09:46:30.42	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:46:31.25	SWS	-	-	-	-	Idling
09:46:35.58	SWS	-0.0	-	-	-	Telescope sent to 180.000
09:46:37.31	SWS	179.2	-	-	-	Telescope stopped.
09:46:38.76	SWS	180.0	-	-	-	Telescope sent to 180.000
09:46:39.74	SWS	-	-	-	-	Manual scene recording started.
09:47:20.21	USH	-	-	-	-	Idling
09:47:20.22	SWS	-	-	-	-	Idling
09:47:20.22	LSH	-	-	-	-	Idling
09:47:22.73	---	-	-	-	-	Reset shutters.
09:47:25.95	USH	-	-	-	-	Dark measurement started.
09:47:25.98	LSH	-	-	-	-	Dark measurement started.
09:47:26.01	SWS	-	-	-	-	Dark measurement started.
09:47:26.70	SWS	-	-	-	-	Dark measurement started.
09:47:27.00	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:47:27.01	LSH	-	-	-	-	Dark measurement started.
09:47:27.42	USH	-	-	-	-	Idling
09:47:28.16	SWS	-	-	-	-	Idling
09:47:29.68	SWS	-	-	-	-	Dark measurement started.
09:47:29.69	USH	-	-	-	-	Dark measurement started.
09:47:31.14	SWS	-	-	-	-	Idling
09:47:31.33	USH	-	-	-	-	Idling
09:47:33.49	LSH	-	-	-	-	Idling
09:47:34.51	LSH	-	-	-	-	Manual scene recording started.
09:47:34.51	SWS	-	-	-	-	Manual scene recording started.
09:47:34.54	USH	-	-	-	-	Manual scene recording started.
09:48:46.93	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:48:48.99	SWS	-	-	-	-	Idling
09:48:50.46	SWS	180.0	-	-	-	Telescope sent to 0.000
09:48:52.13	SWS	3.3	-	-	-	Telescope stopped.
09:48:53.09	SWS	-	-	-	-	Dark measurement started.
09:48:54.54	SWS	-	-	-	-	Idling
09:48:54.97	SWS	-	-	-	-	Manual scene recording started.
09:49:09.04	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:49:09.86	SWS	-	-	-	-	Idling
09:49:10.48	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:49:15.72	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
09:49:15.73	SWS	-	-	-	30	NIR int.time changed from 100ms to 30ms.
09:49:17.87	SWS	-	-	-	-	Dark measurement started.
09:49:18.63	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:49:20.64	SWS	-	-	-	30	NIR int.time changed from 30ms to 30ms.
09:49:23.21	SWS	-	-	-	100	NIR int.time changed from 30ms to 100ms.
09:49:24.73	SWS	-	-	-	-	Dark measurement started.
09:49:26.18	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:49:27.63	SWS	-	-	-	-	Manual scene recording started.
09:49:33.76	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:49:35.46	SWS	0.0	-	-	-	Telescope sent to 180.000
09:49:37.17	SWS	179.2	-	-	-	Telescope stopped.
09:49:38.33	SWS	-	-	-	-	Manual scene recording started.
09:51:01.76	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:51:02.61	SWS	-	-	-	-	Idling
09:51:12.79	SWS	180.0	-	-	-	Telescope sent to 0.000
09:51:14.51	SWS	0.8	-	-	-	Telescope stopped.
09:51:15.36	SWS	0.0	-	-	-	Telescope sent to 0.000
09:51:16.46	SWS	-	-	-	-	Manual scene recording started.
09:55:09.57	USH	-	-	-	-	Idling
09:55:09.59	SWS	-	-	-	-	Idling
09:55:09.83	LSH	-	-	-	-	Idling
09:55:12.71	---	-	-	-	-	Reset shutters.
09:55:16.67	LSH	-	-	-	-	Dark measurement started.
09:55:16.68	USH	-	-	-	-	Dark measurement started.
09:55:16.68	SWS	-	-	-	-	Dark measurement started.

09:55:17.92	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:55:18.13	USH	-	-	-	-	Idling
09:55:18.33	SWS	-	-	-	-	Idling
09:55:23.55	LSH	-	-	-	-	Idling
09:55:26.10	SWS	0.0	-	-	-	Telescope sent to 180.000
09:55:27.82	SWS	179.2	-	-	-	Telescope stopped.
09:55:29.28	SWS	180.0	-	-	-	Telescope sent to 180.000
09:55:34.22	LSH	-	-	-	-	Dark measurement started.
09:55:34.22	USH	-	-	-	-	Dark measurement started.
09:55:34.25	SWS	-	-	-	-	Dark measurement started.
09:55:35.05	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:55:35.87	USH	-	-	-	-	Idling
09:55:36.06	SWS	-	-	-	-	Idling
09:55:37.16	SWS	-	-	-	-	Dark measurement started.
09:55:37.16	USH	-	-	-	-	Dark measurement started.
09:55:38.61	SWS	-	-	-	-	Idling
09:55:38.81	USH	-	-	-	-	Idling
09:55:40.69	LSH	-	-	-	-	Idling
09:57:35.24	SWS	-	-	-	-	Dark measurement started.
09:57:35.24	LSH	-	-	-	-	Dark measurement started.
09:57:35.25	USH	-	-	-	-	Dark measurement started.
09:57:36.27	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
09:57:36.68	SWS	-	-	-	-	Idling
09:57:37.10	USH	-	-	-	-	Idling
09:57:38.46	SWS	-	-	-	-	Dark measurement started.
09:57:38.50	USH	-	-	-	-	Dark measurement started.
09:57:39.92	SWS	-	-	-	-	Idling
09:57:40.12	USH	-	-	-	-	Idling
09:57:40.91	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:57:40.91	USH	-	-	-	-	Manual scene sampling started - Not Recording!
09:57:41.91	LSH	-	-	-	-	Idling
09:58:10.67	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
09:58:57.00	SWS	-	-	50	-	VIS int.time changed from 30ms to 50ms.
09:58:59.17	SWS	-	-	-	-	Dark measurement started.
09:59:00.61	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
09:59:27.77	USH	-	-	-	-	Manual scene recording started.
09:59:28.20	SWS	-	-	-	-	Manual scene recording started.
09:59:28.33	LSH	-	-	-	-	Manual scene recording started.
10:01:30.59	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:01:31.44	SWS	-	-	-	-	Idling
10:01:33.63	SWS	-	-	-	-	Dark measurement started.
10:01:35.07	SWS	-	-	-	-	Idling
10:01:36.60	SWS	180.0	-	-	-	Telescope sent to 0.000
10:01:38.29	SWS	3.2	-	-	-	Telescope stopped.
10:01:39.19	SWS	0.0	-	-	-	Telescope sent to 0.000
10:01:57.29	SWS	-	-	-	-	Dark measurement started.
10:01:58.74	SWS	-	-	-	-	Idling
10:02:05.06	SWS	-	-	-	-	Manual scene recording started.
10:02:07.99	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:02:13.63	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:02:18.59	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:02:19.44	SWS	-	-	-	-	Idling
10:02:24.05	SWS	-	-	25	-	VIS int.time changed from 50ms to 25ms.
10:02:26.02	SWS	-	-	-	-	Dark measurement started.
10:02:27.77	SWS	-	-	-	-	Idling
10:02:28.50	SWS	-	-	-	-	Manual scene recording started.
10:04:06.81	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:04:07.64	SWS	-	-	-	-	Idling
10:04:09.21	SWS	-	-	-	-	Dark measurement started.
10:04:10.66	SWS	-	-	-	-	Idling
10:04:12.15	SWS	0.0	-	-	-	Telescope sent to 180.000
10:04:13.87	SWS	179.6	-	-	-	Telescope stopped.
10:04:16.05	SWS	-	-	50	-	VIS int.time changed from 25ms to 50ms.
10:04:17.14	SWS	-	-	-	-	Dark measurement started.
10:04:18.84	SWS	-	-	-	-	Idling
10:04:19.88	SWS	180.0	-	-	-	Telescope sent to 180.000
10:04:21.65	SWS	-	-	-	-	Manual scene recording started.
10:04:26.59	USH	-	-	-	-	Manual scene sampling started - Not Recording!
10:04:27.44	USH	-	-	-	-	Idling



10:04:28.32	USH	-	-	-	-	Dark measurement started.
10:04:29.77	USH	-	-	-	-	Idling
10:04:30.28	USH	-	-	-	-	Manual scene recording started.
10:04:32.30	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
10:04:33.62	LSH	-	-	-	-	Idling
10:04:34.81	LSH	-	-	-	-	Dark measurement started.
10:04:35.65	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:04:41.30	LSH	-	-	-	-	Idling
10:04:41.64	LSH	-	-	-	-	Manual scene recording started.
10:06:22.58	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:06:23.40	SWS	-	-	-	-	Idling
10:06:25.06	SWS	180.0	-	-	-	Telescope sent to 0.000
10:06:25.65	SWS	-	-	-	-	Dark measurement started.
10:06:26.80	SWS	0.0	-	-	-	Telescope stopped.
10:06:27.12	SWS	-	-	-	-	Idling
10:06:29.63	SWS	-	-	25	-	VIS int.time changed from 50ms to 25ms.
10:06:31.62	SWS	-	-	-	-	Dark measurement started.
10:06:33.33	SWS	-	-	-	-	Idling
10:06:33.57	SWS	-0.0	-	-	-	Telescope sent to 0.000
10:06:34.78	SWS	-	-	-	-	Manual scene recording started.
10:08:07.38	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:08:08.21	SWS	-	-	-	-	Idling
10:08:09.36	SWS	-	-	-	-	Dark measurement started.
10:08:10.82	SWS	-	-	-	-	Idling
10:08:12.18	SWS	0.0	-	-	-	Telescope sent to 180.000
10:08:13.92	SWS	179.5	-	-	-	Telescope stopped.
10:08:15.25	SWS	-	-	50	-	VIS int.time changed from 25ms to 50ms.
10:08:17.66	SWS	180.0	-	-	-	Telescope sent to 180.000
10:08:18.53	SWS	-	-	-	-	Dark measurement started.
10:08:20.22	SWS	-	-	-	-	Idling
10:08:20.54	SWS	-	-	-	-	Manual scene recording started.
10:09:27.83	LSH	-	-	-	-	Idling
10:09:27.86	SWS	-	-	-	-	Idling
10:09:27.90	USH	-	-	-	-	Idling
10:09:36.54	---	-	-	-	-	Reset shutters.
10:09:40.57	LSH	-	-	-	-	Dark measurement started.
10:09:40.58	USH	-	-	-	-	Dark measurement started.
10:09:40.59	SWS	-	-	-	-	Dark measurement started.
10:09:41.42	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:09:42.24	USH	-	-	-	-	Idling
10:09:42.45	SWS	-	-	-	-	Idling
10:09:43.68	SWS	-	-	-	-	Dark measurement started.
10:09:43.69	USH	-	-	-	-	Dark measurement started.
10:09:45.15	SWS	-	-	-	-	Idling
10:09:45.35	USH	-	-	-	-	Idling
10:09:46.35	SWS	-	-	-	-	Dark measurement started.
10:09:46.35	USH	-	-	-	-	Dark measurement started.
10:09:47.06	LSH	-	-	-	-	Idling
10:09:47.83	SWS	-	-	-	-	Idling
10:09:48.01	USH	-	-	-	-	Idling
10:09:48.39	SWS	-	-	-	-	Dark measurement started.
10:09:48.40	LSH	-	-	-	-	Dark measurement started.
10:09:48.40	USH	-	-	-	-	Dark measurement started.
10:09:49.43	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:09:49.84	SWS	-	-	-	-	Idling
10:09:50.26	USH	-	-	-	-	Idling
10:09:50.87	SWS	-	-	-	-	Dark measurement started.
10:09:50.87	USH	-	-	-	-	Dark measurement started.
10:09:52.35	SWS	-	-	-	-	Idling
10:09:52.53	USH	-	-	-	-	Idling
10:09:52.96	SWS	-	-	-	-	Dark measurement started.
10:09:52.97	USH	-	-	-	-	Dark measurement started.
10:09:54.41	SWS	-	-	-	-	Idling
10:09:54.61	USH	-	-	-	-	Idling
10:09:55.10	LSH	-	-	-	-	Idling
10:10:05.58	SWS	180.0	-	-	-	Telescope sent to 0.000
10:10:07.31	SWS	0.3	-	-	-	Telescope stopped.
10:10:08.31	SWS	0.0	-	-	-	Telescope sent to 0.000
10:10:16.18	SWS	-	-	100	-	VIS int.time changed from 50ms to 100ms.

10:10:19.32	SWS	-	-	-	-	Dark measurement started.
10:10:21.01	SWS	-	-	-	-	Idling
10:10:21.61	SWS	-	-	-	-	Dark measurement started.
10:10:23.06	SWS	-	-	-	-	Idling
10:11:13.92	USH	-	-	-	-	Dark measurement started.
10:11:13.92	LSH	-	-	-	-	Dark measurement started.
10:11:13.95	SWS	-	-	-	-	Dark measurement started.
10:11:15.15	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:11:15.37	USH	-	-	-	-	Idling
10:11:15.57	SWS	-	-	-	-	Idling
10:11:16.58	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:11:16.59	USH	-	-	-	-	Manual scene sampling started - Not Recording!
10:11:20.78	LSH	-	-	-	-	Idling
10:12:20.35	---	-	-	-	-	*** Freezer temp 10 deg C
10:13:34.14	USH	-	-	-	-	Idling
10:13:34.16	SWS	-	-	-	-	Idling
10:13:36.95	SWS	-	-	-	-	Dark measurement started.
10:13:36.96	LSH	-	-	-	-	Dark measurement started.
10:13:36.97	USH	-	-	-	-	Dark measurement started.
10:13:37.99	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:13:38.53	SWS	-	-	-	-	Idling
10:13:38.83	USH	-	-	-	-	Idling
10:13:41.69	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:13:41.69	USH	-	-	-	-	Manual scene sampling started - Not Recording!
10:13:43.63	LSH	-	-	-	-	Idling
10:13:50.59	LSH	-	-	-	-	Manual scene recording started.
10:13:52.07	USH	-	-	-	-	Manual scene recording started.
10:14:39.42	LSH	-	-	-	-	Idling
10:14:39.54	USH	-	-	-	-	Idling
10:14:39.79	SWS	-	-	-	-	Idling
10:14:40.95	USH	-	-	-	-	Dark measurement started.
10:14:40.96	LSH	-	-	-	-	Dark measurement started.
10:14:40.97	SWS	-	-	-	-	Dark measurement started.
10:14:41.99	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:14:42.40	USH	-	-	-	-	Idling
10:14:42.81	SWS	-	-	-	-	Idling
10:14:45.94	SWS	-	-	-	-	Dark measurement started.
10:14:45.95	USH	-	-	-	-	Dark measurement started.
10:14:47.40	SWS	-	-	-	-	Idling
10:14:47.60	USH	-	-	-	-	Idling
10:14:48.27	LSH	-	-	-	-	Idling
10:14:51.40	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:14:52.52	USH	-	-	-	-	Manual scene sampling started - Not Recording!
10:14:54.22	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
10:14:57.08	USH	-	-	-	-	Manual scene recording started.
10:14:57.79	LSH	-	-	-	-	Manual scene recording started.
10:15:04.07	SWS	-	-	-	-	Manual scene recording started.
10:17:07.25	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:17:08.09	SWS	-	-	-	-	Idling
10:17:08.75	SWS	-	-	-	-	Dark measurement started.
10:17:10.22	SWS	-	-	-	-	Idling
10:17:10.30	SWS	0.0	-	-	-	Telescope sent to 180.000
10:17:12.03	SWS	179.5	-	-	-	Telescope stopped.
10:17:14.59	SWS	-	-	25	-	VIS int.time changed from 100ms to 25ms.
10:17:15.40	SWS	-	-	-	-	Dark measurement started.
10:17:17.09	SWS	-	-	-	-	Idling
10:17:17.15	SWS	180.0	-	-	-	Telescope sent to 180.000
10:17:18.43	SWS	-	-	-	-	Manual scene recording started.
10:19:21.32	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:19:22.16	SWS	-	-	-	-	Idling
10:19:22.89	SWS	-	-	-	-	Dark measurement started.
10:19:24.34	SWS	-	-	-	-	Idling
10:19:25.00	SWS	180.0	-	-	-	Telescope sent to 0.000
10:19:26.74	SWS	0.3	-	-	-	Telescope stopped.
10:19:27.53	SWS	-	-	100	-	VIS int.time changed from 25ms to 100ms.
10:19:28.40	SWS	-	-	-	-	Dark measurement started.
10:19:30.10	SWS	-	-	-	-	Idling
10:19:30.65	SWS	-0.0	-	-	-	Telescope sent to 0.000
10:19:32.09	SWS	-	-	-	-	Manual scene recording started.

10:19:37.93	USH	-	-	-	-	Manual scene sampling started - Not Recording!
10:19:38.76	USH	-	-	-	-	Idling
10:19:39.88	USH	-	-	-	-	Dark measurement started.
10:19:41.36	USH	-	-	-	-	Idling
10:19:41.95	USH	-	-	-	-	Manual scene recording started.
10:19:44.02	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
10:19:46.48	LSH	-	-	-	-	Idling
10:19:47.68	LSH	-	-	-	-	Dark measurement started.
10:19:48.51	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:19:54.16	LSH	-	-	-	-	Idling
10:19:54.63	LSH	-	-	-	-	Manual scene recording started.
10:21:33.46	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:21:34.29	SWS	-	-	-	-	Idling
10:21:35.90	SWS	-	-	-	-	Dark measurement started.
10:21:37.35	SWS	-	-	-	-	Idling
10:21:38.21	SWS	0.0	-	-	-	Telescope sent to 180.000
10:21:39.97	SWS	180.0	-	-	-	Telescope stopped.
10:21:41.73	SWS	-	-	25	-	VIS int.time changed from 100ms to 25ms.
10:21:42.71	SWS	-	-	-	-	Dark measurement started.
10:21:44.37	SWS	180.0	-	-	-	Telescope sent to 180.000
10:21:44.42	SWS	-	-	-	-	Idling
10:21:44.95	SWS	-	-	-	-	Manual scene recording started.
10:23:37.95	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:23:40.03	SWS	-	-	-	-	Dark measurement started.
10:23:41.35	SWS	180.0	-	-	-	Telescope sent to 0.000
10:23:41.48	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:23:43.09	SWS	0.1	-	-	-	Telescope stopped.
10:23:45.62	SWS	-	-	100	-	VIS int.time changed from 25ms to 100ms.
10:23:46.91	SWS	-	-	-	-	Dark measurement started.
10:23:48.00	SWS	-0.0	-	-	-	Telescope sent to 0.000
10:23:48.37	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:23:49.20	SWS	-	-	-	-	Manual scene recording started.
10:25:11.92	USH	-	-	-	-	Idling
10:25:11.96	SWS	-	-	-	-	Idling
10:25:12.39	LSH	-	-	-	-	Idling
10:25:15.09	---	-	-	-	-	Reset shutters.
10:25:19.32	SWS	-	-	-	-	Dark measurement started.
10:25:19.32	LSH	-	-	-	-	Dark measurement started.
10:25:19.35	USH	-	-	-	-	Dark measurement started.
10:25:20.38	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:25:20.79	SWS	-	-	-	-	Idling
10:25:21.21	USH	-	-	-	-	Idling
10:25:21.68	USH	-	-	-	-	Dark measurement started.
10:25:21.68	SWS	-	-	-	-	Dark measurement started.
10:25:23.13	USH	-	-	-	-	Idling
10:25:23.32	SWS	-	-	-	-	Idling
10:25:24.69	USH	-	-	-	-	Dark measurement started.
10:25:24.69	SWS	-	-	-	-	Dark measurement started.
10:25:26.01	LSH	-	-	-	-	Idling
10:25:26.17	USH	-	-	-	-	Idling
10:25:26.35	SWS	-	-	-	-	Idling
10:25:28.97	USH	-	-	-	-	Manual scene recording started.
10:25:30.75	LSH	-	-	-	-	Manual scene recording started.
10:25:42.04	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:27:04.47	USH	-	-	-	-	Idling
10:27:04.72	LSH	-	-	-	-	Idling
10:27:04.85	SWS	-	-	-	-	Idling
10:27:06.04	SWS	-	-	-	-	Dark measurement started.
10:27:06.04	LSH	-	-	-	-	Dark measurement started.
10:27:06.06	USH	-	-	-	-	Dark measurement started.
10:27:07.08	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:27:07.49	SWS	-	-	-	-	Idling
10:27:07.91	USH	-	-	-	-	Idling
10:27:09.20	SWS	-	-	-	-	Dark measurement started.
10:27:09.22	USH	-	-	-	-	Dark measurement started.
10:27:10.69	SWS	-	-	-	-	Idling
10:27:10.86	USH	-	-	-	-	Idling
10:27:12.72	LSH	-	-	-	-	Idling
10:27:13.61	USH	-	-	-	-	Manual scene recording started.

10:27:15.06	LSH	-	-	-	-	Manual scene recording started.
10:29:01.39	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:33:57.01	USH	-	-	-	-	Dark measurement started.
10:33:57.12	LSH	-	-	-	-	Dark measurement started.
10:33:57.55	SWS	-	-	-	-	Dark measurement started.
10:33:58.06	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:33:58.47	USH	-	-	-	-	Manual scene recording started.
10:33:59.01	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:34:03.69	LSH	-	-	-	-	Manual scene recording started.
10:34:36.85	USH	-	-	-	-	Idling
10:34:37.01	LSH	-	-	-	-	Idling
10:34:37.30	SWS	-	-	-	-	Idling
10:34:37.92	SWS	-	-	-	-	Dark measurement started.
10:34:37.94	LSH	-	-	-	-	Dark measurement started.
10:34:37.94	USH	-	-	-	-	Dark measurement started.
10:34:38.97	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:34:39.41	SWS	-	-	-	-	Idling
10:34:39.83	USH	-	-	-	-	Idling
10:34:44.60	LSH	-	-	-	-	Idling
10:34:44.88	USH	-	-	-	-	Manual scene recording started.
10:34:46.48	LSH	-	-	-	-	Manual scene recording started.
10:34:56.85	SWS	-	-	-	-	Manual scene recording started.
10:35:27.23	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
10:35:33.86	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:35:35.35	SWS	-	-	-	-	Dark measurement started.
10:35:36.82	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:35:37.64	SWS	-	-	-	-	Manual scene recording started.
10:36:32.67	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:36:33.51	SWS	-	-	-	-	Idling
10:36:35.33	SWS	0.0	-	-	-	Telescope sent to 180.000
10:36:35.93	SWS	-	-	-	-	Dark measurement started.
10:36:37.07	SWS	179.8	-	-	-	Telescope stopped.
10:36:37.40	SWS	-	-	-	-	Idling
10:36:37.97	SWS	180.0	-	-	-	Telescope sent to 180.000
10:36:39.33	SWS	-	-	-	-	Manual scene recording started.
10:37:54.49	SWS	-	-	-	-	Warning: Clipping may be occurring.
10:38:15.30	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:38:16.14	SWS	-	-	-	-	Idling
10:38:16.81	SWS	-	-	-	-	Dark measurement started.
10:38:18.29	SWS	-	-	-	-	Idling
10:38:18.64	SWS	180.0	-	-	-	Telescope sent to 0.000
10:38:20.41	SWS	0.1	-	-	-	Telescope stopped.
10:38:20.74	SWS	-0.0	-	-	-	Telescope stopped.
10:38:21.98	SWS	-	-	-	-	Manual scene recording started.
10:38:28.45	USH	-	-	-	-	Manual scene sampling started - Not Recording!
10:38:29.28	USH	-	-	-	-	Idling
10:38:29.93	USH	-	-	-	-	Manual scene recording started.
10:38:31.88	USH	-	-	-	-	Manual scene sampling started - Not Recording!
10:38:32.72	USH	-	-	-	-	Idling
10:38:33.13	USH	-	-	-	-	Dark measurement started.
10:38:34.58	USH	-	-	-	-	Idling
10:38:35.81	USH	-	-	-	-	Manual scene recording started.
10:38:37.12	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
10:38:38.44	LSH	-	-	-	-	Idling
10:38:39.16	LSH	-	-	-	-	Dark measurement started.
10:38:39.99	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:38:45.63	LSH	-	-	-	-	Idling
10:38:45.99	LSH	-	-	-	-	Manual scene recording started.
10:39:55.93	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:39:56.76	SWS	-	-	-	-	Idling
10:39:58.00	SWS	0.0	-	-	-	Telescope sent to 180.000
10:39:58.66	SWS	-	-	-	-	Dark measurement started.
10:39:59.78	SWS	180.0	-	-	-	Telescope stopped.
10:40:00.10	SWS	-	-	-	-	Idling
10:40:00.62	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
10:40:03.89	SWS	-	-	50	-	VIS int.time changed from 100ms to 50ms.
10:40:05.07	SWS	-	-	-	-	Dark measurement started.
10:40:06.81	SWS	-	-	-	-	Idling
10:40:08.10	SWS	180.0	-	-	-	Telescope sent to 180.000

10:40:08.96	SWS	-	-	-	-	Manual scene recording started.
10:41:40.03	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:41:40.86	SWS	-	-	-	-	Idling
10:41:41.57	SWS	-	-	-	-	Dark measurement started.
10:41:43.03	SWS	-	-	-	-	Idling
10:41:43.27	SWS	180.0	-	-	-	Telescope sent to 0.000
10:41:45.00	SWS	0.6	-	-	-	Telescope stopped.
10:41:46.08	SWS	-	-	100	-	VIS int.time changed from 50ms to 100ms.
10:41:46.93	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
10:41:48.02	SWS	-	-	-	-	Dark measurement started.
10:41:49.74	SWS	-	-	-	-	Idling
10:41:49.89	SWS	-0.0	-	-	-	Telescope sent to 0.000
10:41:51.31	SWS	-	-	-	-	Manual scene recording started.
10:41:54.54	USH	-	-	-	-	Manual scene sampling started - Not Recording!
10:41:55.37	USH	-	-	-	-	Idling
10:41:56.74	USH	-	-	-	-	Dark measurement started.
10:41:58.21	USH	-	-	-	-	Idling
10:41:58.60	USH	-	-	-	-	Manual scene recording started.
10:42:00.35	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
10:42:01.68	LSH	-	-	-	-	Idling
10:42:02.56	LSH	-	-	-	-	Dark measurement started.
10:42:03.40	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:42:09.04	LSH	-	-	-	-	Idling
10:42:10.48	LSH	-	-	-	-	Manual scene recording started.
10:43:42.95	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:43:43.80	SWS	-	-	-	-	Idling
10:43:45.26	SWS	-	-	-	-	Dark measurement started.
10:43:46.71	SWS	-	-	-	-	Idling
10:43:46.96	SWS	0.0	-	-	-	Telescope sent to 180.000
10:43:48.71	SWS	179.9	-	-	-	Telescope stopped.
10:43:50.15	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
10:43:51.85	SWS	-	-	50	-	VIS int.time changed from 100ms to 50ms.
10:43:52.64	SWS	-	-	-	-	Dark measurement started.
10:43:54.35	SWS	-	-	-	-	Idling
10:43:54.74	SWS	180.0	-	-	-	Telescope sent to 180.000
10:43:55.44	SWS	-	-	-	-	Manual scene recording started.
10:45:11.73	USH	-	-	-	-	Idling
10:45:11.76	SWS	-	-	-	-	Idling
10:45:11.85	LSH	-	-	-	-	Idling
10:45:13.31	---	-	-	-	-	Reset shutters.
10:45:17.01	USH	-	-	-	-	Dark measurement started.
10:45:17.02	LSH	-	-	-	-	Dark measurement started.
10:45:17.03	SWS	-	-	-	-	Dark measurement started.
10:45:18.06	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:45:18.47	USH	-	-	-	-	Idling
10:45:18.89	SWS	-	-	-	-	Idling
10:45:20.85	SWS	-	-	-	-	Dark measurement started.
10:45:20.86	USH	-	-	-	-	Dark measurement started.
10:45:22.32	USH	-	-	-	-	Idling
10:45:22.51	SWS	-	-	-	-	Idling
10:45:23.07	SWS	-	-	-	-	Dark measurement started.
10:45:23.07	USH	-	-	-	-	Dark measurement started.
10:45:23.69	LSH	-	-	-	-	Idling
10:45:24.50	SWS	-	-	-	-	Idling
10:45:24.73	USH	-	-	-	-	Idling
10:45:32.18	USH	-	-	-	-	Manual scene recording started.
10:45:34.11	LSH	-	-	-	-	Manual scene recording started.
10:45:37.36	SWS	180.0	-	-	-	Telescope sent to 0.000
10:45:39.10	SWS	0.1	-	-	-	Telescope stopped.
10:45:41.14	SWS	0.0	-	-	-	Telescope sent to 0.000
10:45:45.88	SWS	-	-	100	-	VIS int.time changed from 50ms to 100ms.
10:45:47.75	SWS	-	-	-	-	Dark measurement started.
10:45:49.47	SWS	-	-	-	-	Idling
10:45:52.29	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:50:45.18	USH	-	-	-	-	Idling
10:50:45.42	LSH	-	-	-	-	Idling
10:50:45.67	SWS	-	-	-	-	Idling
10:50:46.75	---	-	-	-	-	Reset shutters.
10:50:50.17	USH	-	-	-	-	Dark measurement started.

10:50:50.18	LSH	-	-	-	-	Dark measurement started.
10:50:50.19	SWS	-	-	-	-	Dark measurement started.
10:50:51.21	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:50:51.63	USH	-	-	-	-	Idling
10:50:52.05	SWS	-	-	-	-	Idling
10:50:56.84	LSH	-	-	-	-	Idling
10:50:58.61	---	-	-	-	-	Reset shutters.
10:51:05.93	SWS	-	-	-	-	Dark measurement started.
10:51:05.94	LSH	-	-	-	-	Dark measurement started.
10:51:05.95	USH	-	-	-	-	Dark measurement started.
10:51:06.98	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:51:07.40	SWS	-	-	-	-	Idling
10:51:07.82	USH	-	-	-	-	Idling
10:51:11.10	SWS	-	-	-	-	Dark measurement started.
10:51:11.11	USH	-	-	-	-	Dark measurement started.
10:51:12.55	SWS	-	-	-	-	Idling
10:51:12.60	LSH	-	-	-	-	Idling
10:51:12.79	USH	-	-	-	-	Idling
10:51:15.03	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:51:16.12	USH	-	-	-	-	Manual scene sampling started - Not Recording!
10:51:17.55	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
10:55:34.88	USH	-	-	-	-	Idling
10:55:34.93	SWS	-	-	-	-	Idling
10:55:35.19	LSH	-	-	-	-	Idling
10:55:36.12	---	-	-	-	-	Reset shutters.
10:55:39.38	SWS	-	-	-	-	Dark measurement started.
10:55:39.38	LSH	-	-	-	-	Dark measurement started.
10:55:39.41	USH	-	-	-	-	Dark measurement started.
10:55:40.12	USH	-	-	-	-	Dark measurement started.
10:55:40.42	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:55:40.43	LSH	-	-	-	-	Dark measurement started.
10:55:40.84	SWS	-	-	-	-	Idling
10:55:41.50	SWS	-	-	-	-	Dark measurement started.
10:55:41.68	USH	-	-	-	-	Idling
10:55:42.37	USH	-	-	-	-	Dark measurement started.
10:55:42.97	SWS	-	-	-	-	Idling
10:55:43.81	USH	-	-	-	-	Idling
10:55:44.29	SWS	-	-	-	-	Dark measurement started.
10:55:44.29	USH	-	-	-	-	Dark measurement started.
10:55:45.76	SWS	-	-	-	-	Idling
10:55:45.93	USH	-	-	-	-	Idling
10:55:47.55	LSH	-	-	-	-	Idling
10:55:48.39	USH	-	-	-	-	Manual scene recording started.
10:55:49.88	LSH	-	-	-	-	Manual scene recording started.
10:56:01.87	---	-	-	-	-	*** Freezer temp 11 deg C
10:56:53.86	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:57:24.01	USH	-	-	-	-	Idling
10:57:24.44	LSH	-	-	-	-	Idling
10:57:24.58	SWS	-	-	-	-	Idling
10:57:25.24	SWS	-	-	-	-	Dark measurement started.
10:57:25.25	LSH	-	-	-	-	Dark measurement started.
10:57:25.26	USH	-	-	-	-	Dark measurement started.
10:57:26.28	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
10:57:26.71	SWS	-	-	-	-	Idling
10:57:27.13	USH	-	-	-	-	Idling
10:57:29.78	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:57:30.97	USH	-	-	-	-	Manual scene sampling started - Not Recording!
10:57:31.94	LSH	-	-	-	-	Idling
10:57:33.19	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
10:57:50.23	LSH	-	-	-	-	Manual scene recording started.
10:57:50.48	USH	-	-	-	-	Manual scene recording started.
10:57:50.54	SWS	-	-	-	-	Manual scene recording started.
10:59:24.71	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
10:59:25.55	SWS	-	-	-	-	Idling
10:59:31.25	SWS	0.0	-	-	-	Telescope sent to 180.000
10:59:32.23	SWS	-	-	-	-	Dark measurement started.
10:59:32.97	SWS	178.6	-	-	-	Telescope stopped.
10:59:33.72	SWS	-	-	-	-	Idling
10:59:34.44	SWS	180.0	-	-	-	Telescope sent to 180.000

10:59:35.38	SWS	-	-	-	-	Manual scene recording started.
11:01:06.82	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:01:07.65	SWS	-	-	-	-	Idling
11:01:10.26	SWS	180.0	-	-	-	Telescope sent to 0.000
11:01:10.70	SWS	-	-	-	-	Dark measurement started.
11:01:12.02	SWS	0.0	-	-	-	Telescope stopped.
11:01:12.16	SWS	-	-	-	-	Idling
11:01:13.49	SWS	0.0	-	-	-	Telescope sent to 0.000
11:01:14.19	SWS	-	-	-	-	Manual scene recording started.
11:01:16.59	USH	-	-	-	-	Manual scene sampling started - Not Recording!
11:01:17.43	USH	-	-	-	-	Idling
11:01:20.67	USH	-	-	-	-	Dark measurement started.
11:01:22.12	USH	-	-	-	-	Idling
11:01:23.37	USH	-	-	-	-	Manual scene recording started.
11:01:25.08	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
11:01:26.41	LSH	-	-	-	-	Idling
11:01:27.01	LSH	-	-	-	-	Dark measurement started.
11:01:27.84	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:01:33.47	LSH	-	-	-	-	Idling
11:01:33.98	LSH	-	-	-	-	Manual scene recording started.
11:02:49.03	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:02:49.87	SWS	-	-	-	-	Idling
11:02:51.58	SWS	0.0	-	-	-	Telescope sent to 180.000
11:02:52.48	SWS	-	-	-	-	Dark measurement started.
11:02:53.32	SWS	179.9	-	-	-	Telescope stopped.
11:02:53.96	SWS	-	-	-	-	Idling
11:02:54.82	SWS	180.0	-	-	-	Telescope sent to 180.000
11:02:55.70	SWS	-	-	-	-	Manual scene recording started.
11:04:33.71	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:04:37.33	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:04:38.17	SWS	-	-	-	-	Idling
11:04:39.55	SWS	180.0	-	-	-	Telescope sent to 0.000
11:04:41.06	SWS	-	-	-	-	Dark measurement started.
11:04:41.33	SWS	0.0	-	-	-	Telescope stopped.
11:04:42.52	SWS	-	-	-	-	Idling
11:04:43.37	SWS	0.0	-	-	-	Telescope sent to 0.000
11:04:44.73	SWS	-	-	-	-	Manual scene recording started.
11:04:47.84	USH	-	-	-	-	Manual scene sampling started - Not Recording!
11:04:48.67	USH	-	-	-	-	Idling
11:04:49.61	USH	-	-	-	-	Dark measurement started.
11:04:51.06	USH	-	-	-	-	Idling
11:04:51.44	USH	-	-	-	-	Manual scene recording started.
11:04:53.97	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
11:04:59.80	LSH	-	-	-	-	Dark measurement started.
11:05:00.63	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:05:06.30	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
11:05:07.62	LSH	-	-	-	-	Manual scene recording started.
11:07:04.07	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:07:04.92	SWS	-	-	-	-	Idling
11:07:06.97	SWS	-	-	-	-	Dark measurement started.
11:07:08.42	SWS	-	-	-	-	Idling
11:07:09.23	SWS	-0.0	-	-	-	Telescope sent to 180.000
11:07:10.98	SWS	179.9	-	-	-	Telescope stopped.
11:07:14.62	SWS	-	-	35	-	VIS int.time changed from 100ms to 35ms.
11:07:16.50	SWS	-	-	-	-	Dark measurement started.
11:07:18.24	SWS	-	-	-	-	Idling
11:07:18.81	SWS	180.0	-	-	-	Telescope sent to 180.000
11:07:19.70	SWS	-	-	-	-	Manual scene recording started.
11:07:51.34	SWS	-	-	-	-	Idling
11:07:51.35	USH	-	-	-	-	Idling
11:07:51.88	LSH	-	-	-	-	Idling
11:07:53.80	---	-	-	-	-	Reset shutters.
11:07:59.76	SWS	-	-	-	-	Dark measurement started.
11:07:59.77	LSH	-	-	-	-	Dark measurement started.
11:07:59.78	USH	-	-	-	-	Dark measurement started.
11:08:00.80	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:08:01.21	SWS	-	-	-	-	Idling
11:08:01.65	USH	-	-	-	-	Idling
11:08:06.44	LSH	-	-	-	-	Idling

11:08:24.63	USH	-	-	-	-	Dark measurement started.
11:08:24.63	LSH	-	-	-	-	Dark measurement started.
11:08:24.67	SWS	-	-	-	-	Dark measurement started.
11:08:25.67	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:08:26.10	USH	-	-	-	-	Idling
11:08:26.50	SWS	-	-	-	-	Idling
11:08:31.31	LSH	-	-	-	-	Idling
11:11:01.92	USH	-	-	-	-	Dark measurement started.
11:11:01.94	SWS	-	-	-	-	Dark measurement started.
11:11:01.94	LSH	-	-	-	-	Dark measurement started.
11:11:03.18	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:11:03.94	USH	-	-	-	-	Idling
11:11:04.05	SWS	-	-	-	-	Idling
11:11:08.82	LSH	-	-	-	-	Idling
11:11:52.83	SWS	-	-	-	-	Dark measurement started.
11:11:52.84	LSH	-	-	-	-	Dark measurement started.
11:11:52.85	USH	-	-	-	-	Dark measurement started.
11:11:53.87	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:11:54.29	SWS	-	-	-	-	Idling
11:11:54.70	USH	-	-	-	-	Idling
11:11:56.44	USH	-	-	-	-	Manual scene recording started.
11:11:59.51	LSH	-	-	-	-	Idling
11:11:59.91	LSH	-	-	-	-	Manual scene recording started.
11:14:11.60	USH	-	-	-	-	Idling
11:14:11.71	LSH	-	-	-	-	Idling
11:14:15.42	---	-	-	-	-	Reset shutters.
11:14:18.98	USH	-	-	-	-	Dark measurement started.
11:14:18.98	LSH	-	-	-	-	Dark measurement started.
11:14:19.01	SWS	-	-	-	-	Dark measurement started.
11:14:20.04	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:14:20.45	USH	-	-	-	-	Idling
11:14:21.48	SWS	-	-	-	-	Idling
11:14:25.67	LSH	-	-	-	-	Idling
11:16:02.00	SWS	-	-	-	-	Dark measurement started.
11:16:02.00	LSH	-	-	-	-	Dark measurement started.
11:16:02.01	USH	-	-	-	-	Dark measurement started.
11:16:03.04	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:16:03.47	SWS	-	-	-	-	Idling
11:16:03.88	USH	-	-	-	-	Idling
11:16:08.68	LSH	-	-	-	-	Idling
11:16:13.73	LSH	-	-	-	-	Dark measurement started.
11:16:13.73	SWS	-	-	-	-	Dark measurement started.
11:16:13.76	USH	-	-	-	-	Dark measurement started.
11:16:14.57	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:16:15.39	SWS	-	-	-	-	Idling
11:16:15.61	USH	-	-	-	-	Idling
11:16:20.22	LSH	-	-	-	-	Idling
11:16:22.88	SWS	-	-	-	-	Manual scene recording started.
11:16:22.88	LSH	-	-	-	-	Manual scene recording started.
11:16:22.89	USH	-	-	-	-	Manual scene recording started.
11:17:45.92	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:17:53.60	USH	-	-	-	-	Idling
11:17:53.61	SWS	-	-	-	-	Idling
11:17:53.79	LSH	-	-	-	-	Idling
11:17:55.02	SWS	-	-	-	-	Dark measurement started.
11:17:55.02	LSH	-	-	-	-	Dark measurement started.
11:17:55.06	USH	-	-	-	-	Dark measurement started.
11:17:56.27	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:17:56.50	SWS	-	-	-	-	Idling
11:17:56.71	USH	-	-	-	-	Idling
11:18:01.90	LSH	-	-	-	-	Idling
11:18:11.78	LSH	-	-	-	-	Manual scene recording started.
11:18:11.78	SWS	-	-	-	-	Manual scene recording started.
11:18:11.80	USH	-	-	-	-	Manual scene recording started.
11:19:46.89	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:19:47.72	SWS	-	-	-	-	Idling
11:19:49.55	SWS	180.0	-	-	-	Telescope sent to 0.000
11:19:50.23	SWS	-	-	-	-	Dark measurement started.
11:19:51.31	SWS	0.1	-	-	-	Telescope stopped.



11:19:51.67	SWS	-	-	-	-	Idling
11:19:54.41	SWS	-	-	100	-	VIS int.time changed from 35ms to 100ms.
11:19:55.82	SWS	-	-	-	-	Dark measurement started.
11:19:57.46	SWS	0.0	-	-	-	Telescope sent to 0.000
11:19:57.53	SWS	-	-	-	-	Idling
11:19:58.84	SWS	-	-	-	-	Manual scene recording started.
11:21:00.19	---	-	-	-	-	*** Freezer temp 11 deg C
11:21:30.27	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:21:31.10	SWS	-	-	-	-	Idling
11:21:32.46	SWS	-	-	-	-	Dark measurement started.
11:21:33.91	SWS	-	-	-	-	Idling
11:21:34.40	SWS	-0.0	-	-	-	Telescope sent to 180.000
11:21:36.15	SWS	179.9	-	-	-	Telescope stopped.
11:21:38.84	SWS	-	-	50	-	VIS int.time changed from 100ms to 50ms.
11:21:40.09	SWS	-	-	-	-	Dark measurement started.
11:21:41.81	SWS	-	-	-	-	Idling
11:21:42.27	SWS	180.0	-	-	-	Telescope sent to 180.000
11:21:43.86	SWS	-	-	-	-	Manual scene recording started.
11:21:44.68	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:21:47.99	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:21:53.49	SWS	-	-	30	-	VIS int.time changed from 50ms to 30ms.
11:21:55.30	SWS	-	-	-	-	Dark measurement started.
11:21:56.75	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:22:00.07	SWS	-	-	-	-	Manual scene recording started.
11:22:14.65	USH	-	-	-	-	Manual scene sampling started - Not Recording!
11:22:15.51	USH	-	-	-	-	Idling
11:22:16.58	USH	-	-	-	-	Dark measurement started.
11:22:18.03	USH	-	-	-	-	Idling
11:22:19.87	USH	-	-	-	-	Manual scene recording started.
11:22:22.13	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
11:22:23.46	LSH	-	-	-	-	Idling
11:22:23.93	LSH	-	-	-	-	Dark measurement started.
11:22:24.76	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:22:30.39	LSH	-	-	-	-	Idling
11:22:31.12	LSH	-	-	-	-	Manual scene recording started.
11:23:35.30	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:23:36.14	SWS	-	-	-	-	Idling
11:23:37.73	SWS	-	-	-	-	Dark measurement started.
11:23:39.19	SWS	-	-	-	-	Idling
11:23:39.49	SWS	180.0	-	-	-	Telescope sent to 0.000
11:23:41.24	SWS	0.0	-	-	-	Telescope stopped.
11:23:43.11	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
11:23:44.01	SWS	-	-	-	-	Dark measurement started.
11:23:45.73	SWS	-	-	-	-	Idling
11:23:46.21	SWS	-0.0	-	-	-	Telescope sent to 0.000
11:23:46.79	SWS	-	-	-	-	Manual scene recording started.
11:25:18.25	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:25:19.09	SWS	-	-	-	-	Idling
11:25:20.19	SWS	-	-	-	-	Dark measurement started.
11:25:21.66	SWS	-	-	-	-	Idling
11:25:21.91	SWS	-0.0	-	-	-	Telescope sent to 180.000
11:25:23.67	SWS	180.0	-	-	-	Telescope stopped.
11:25:24.91	SWS	-	-	25	-	VIS int.time changed from 100ms to 25ms.
11:25:25.86	SWS	-	-	-	-	Dark measurement started.
11:25:27.57	SWS	-	-	-	-	Idling
11:25:28.06	SWS	180.0	-	-	-	Telescope sent to 180.000
11:25:28.79	SWS	-	-	-	-	Manual scene recording started.
11:25:31.67	USH	-	-	-	-	Manual scene sampling started - Not Recording!
11:25:32.50	USH	-	-	-	-	Idling
11:25:33.09	USH	-	-	-	-	Dark measurement started.
11:25:34.56	USH	-	-	-	-	Idling
11:25:34.92	USH	-	-	-	-	Manual scene recording started.
11:25:36.38	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
11:25:37.71	LSH	-	-	-	-	Idling
11:25:38.68	LSH	-	-	-	-	Dark measurement started.
11:25:39.51	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:25:45.14	LSH	-	-	-	-	Idling
11:25:48.53	LSH	-	-	-	-	Manual scene recording started.
11:27:12.95	SWS	-	-	-	-	Manual scene sampling started - Not Recording!

11:27:13.79	SWS	-	-	-	-	Idling
11:27:14.57	SWS	-	-	-	-	Dark measurement started.
11:27:16.04	SWS	-	-	-	-	Idling
11:27:16.28	SWS	180.0	-	-	-	Telescope sent to 0.000
11:27:18.06	SWS	0.0	-	-	-	Telescope stopped.
11:27:18.50	SWS	-	-	100	-	VIS int.time changed from 25ms to 100ms.
11:27:19.44	SWS	-	-	-	-	Dark measurement started.
11:27:21.16	SWS	-	-	-	-	Idling
11:27:21.31	SWS	0.0	-	-	-	Telescope sent to 0.000
11:27:21.67	SWS	-	-	-	-	Manual scene recording started.
11:29:25.50	LSH	-	-	-	-	Idling
11:29:25.53	SWS	-	-	-	-	Idling
11:29:25.60	USH	-	-	-	-	Idling
11:29:28.29	---	-	-	-	-	Reset shutters.
11:29:35.35	USH	-	-	-	-	Dark measurement started.
11:29:35.36	SWS	-	-	-	-	Dark measurement started.
11:29:35.40	LSH	-	-	-	-	Dark measurement started.
11:29:36.42	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:29:36.84	USH	-	-	-	-	Idling
11:29:37.26	SWS	-	-	-	-	Idling
11:29:41.06	SWS	-	-	-	-	Dark measurement started.
11:29:41.07	USH	-	-	-	-	Dark measurement started.
11:29:42.07	LSH	-	-	-	-	Idling
11:29:42.52	SWS	-	-	-	-	Idling
11:29:42.72	USH	-	-	-	-	Idling
11:33:06.28	SWS	-	-	-	-	Dark measurement started.
11:33:06.30	LSH	-	-	-	-	Dark measurement started.
11:33:06.33	USH	-	-	-	-	Dark measurement started.
11:33:07.55	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:33:08.31	USH	-	-	-	-	Idling
11:33:08.41	SWS	-	-	-	-	Idling
11:33:10.38	SWS	0.0	-	-	-	Telescope sent to 180.000
11:33:12.14	SWS	180.0	-	-	-	Telescope stopped.
11:33:13.19	LSH	-	-	-	-	Idling
11:33:20.15	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
11:33:21.44	SWS	-	-	-	-	Dark measurement started.
11:33:23.13	SWS	-	-	-	-	Idling
11:33:24.13	SWS	180.0	-	-	-	Telescope sent to 180.000
11:33:25.83	SWS	-	-	-	-	Manual scene recording started.
11:33:25.84	LSH	-	-	-	-	Manual scene recording started.
11:33:25.85	USH	-	-	-	-	Manual scene recording started.
11:35:10.65	---	-	-	-	-	*** Freezer temp 11 deg C
11:36:43.62	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:36:44.46	SWS	-	-	-	-	Idling
11:36:45.10	SWS	-	-	-	-	Dark measurement started.
11:36:46.55	SWS	-	-	-	-	Idling
11:36:52.45	SWS	180.0	-	-	-	Telescope sent to 0.000
11:36:54.16	SWS	0.8	-	-	-	Telescope stopped.
11:36:57.25	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
11:36:59.69	SWS	-	1000	-	-	Sample period changed from 100ms to 1000ms.
11:37:01.32	SWS	-	-	-	-	Dark measurement started.
11:37:03.05	SWS	-	-	-	-	Idling
11:37:04.90	SWS	0.0	-	-	-	Telescope sent to 0.000
11:37:06.36	SWS	-	-	-	-	Manual scene recording started.
11:37:11.69	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:37:13.84	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
11:37:17.33	SWS	-	-	600	-	VIS int.time changed from 100ms to 600ms.
11:37:17.34	SWS	-	-	-	600	NIR int.time changed from 100ms to 600ms.
11:37:20.34	SWS	-	-	-	-	Dark measurement started.
11:37:26.81	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:37:30.56	SWS	-	-	300	-	VIS int.time changed from 600ms to 300ms.
11:37:30.57	SWS	-	-	-	300	NIR int.time changed from 600ms to 300ms.
11:37:32.80	SWS	-	-	-	-	Dark measurement started.
11:37:36.26	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:37:39.76	SWS	-	-	-	-	Idling
11:37:40.69	SWS	-	-	-	-	Dark measurement started.
11:37:44.13	SWS	-	-	-	-	Idling
11:37:44.66	SWS	-	-	-	-	Manual scene recording started.
11:38:29.91	SWS	-	-	-	-	Manual scene sampling started - Not Recording!

11:38:30.94	SWS	-	-	-	-	Idling
11:38:31.42	SWS	-	-	-	-	Dark measurement started.
11:38:34.86	SWS	-	-	-	-	Idling
11:38:36.76	USH	-	1000	-	-	Sample period changed from 100ms to 1000ms.
11:38:39.55	LSH	-	1000	-	-	Sample period changed from 100ms to 1000ms.
11:43:43.86	LSH	-	-	-	-	Idling
11:43:43.86	USH	-	-	-	-	Idling
11:43:46.93	LSH	-	-	-	-	Dark measurement started.
11:43:46.93	USH	-	-	-	-	Dark measurement started.
11:43:46.98	SWS	-	-	-	-	Dark measurement started.
11:43:47.77	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:43:48.62	USH	-	-	-	-	Idling
11:43:51.37	SWS	-	-	-	-	Idling
11:43:51.47	SWS	-	-	-	-	Dark measurement started.
11:43:51.47	USH	-	-	-	-	Dark measurement started.
11:43:53.12	USH	-	-	-	-	Idling
11:43:53.43	LSH	-	-	-	-	Idling
11:43:54.94	SWS	-	-	-	-	Idling
11:43:58.02	SWS	-	-	-	-	Manual scene recording started.
11:43:58.02	LSH	-	-	-	-	Manual scene recording started.
11:43:58.04	USH	-	-	-	-	Manual scene recording started.
11:49:01.16	SWS	-	-	-	-	Idling
11:49:01.41	LSH	-	-	-	-	Idling
11:49:01.54	USH	-	-	-	-	Idling
11:49:04.48	---	-	-	-	-	Reset shutters.
11:49:08.49	USH	-	-	-	-	Dark measurement started.
11:49:08.50	LSH	-	-	-	-	Dark measurement started.
11:49:08.52	SWS	-	-	-	-	Dark measurement started.
11:49:09.54	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:49:09.95	USH	-	-	-	-	Idling
11:49:10.94	USH	-	-	-	-	Dark measurement started.
11:49:12.37	SWS	-	-	-	-	Idling
11:49:12.41	USH	-	-	-	-	Idling
11:49:13.44	SWS	-	-	-	-	Dark measurement started.
11:49:13.45	USH	-	-	-	-	Dark measurement started.
11:49:15.10	USH	-	-	-	-	Idling
11:49:15.17	LSH	-	-	-	-	Idling
11:49:16.50	USH	-	-	-	-	Manual scene recording started.
11:49:16.50	LSH	-	-	-	-	Manual scene recording started.
11:49:16.91	SWS	-	-	-	-	Idling
11:49:20.98	SWS	-	-	-	-	Manual scene recording started.
11:52:52.94	---	-	-	-	-	*** Freezer temp 11 deg C
11:54:17.63	USH	-	-	-	-	Idling
11:54:17.83	LSH	-	-	-	-	Idling
11:54:18.01	SWS	-	-	-	-	Idling
11:54:19.21	---	-	-	-	-	Reset shutters.
11:54:23.62	SWS	-	-	-	-	Dark measurement started.
11:54:23.63	LSH	-	-	-	-	Dark measurement started.
11:54:23.66	USH	-	-	-	-	Dark measurement started.
11:54:24.69	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
11:54:25.64	USH	-	-	-	-	Idling
11:54:27.11	SWS	-	-	-	-	Idling
11:54:27.16	SWS	-	-	-	-	Dark measurement started.
11:54:27.16	USH	-	-	-	-	Dark measurement started.
11:54:28.82	USH	-	-	-	-	Idling
11:54:29.34	USH	-	-	-	-	Dark measurement started.
11:54:30.36	LSH	-	-	-	-	Idling
11:54:30.61	SWS	-	-	-	-	Idling
11:54:30.81	USH	-	-	-	-	Idling
11:54:30.95	SWS	-	-	-	-	Dark measurement started.
11:54:30.96	LSH	-	-	-	-	Dark measurement started.
11:54:30.97	USH	-	-	-	-	Dark measurement started.
11:54:32.87	USH	-	-	-	-	Idling
11:54:33.28	USH	-	-	-	-	Dark measurement started.
11:54:34.47	SWS	-	-	-	-	Idling
11:54:34.78	USH	-	-	-	-	Idling
11:54:34.96	USH	-	-	-	-	Dark measurement started.
11:54:34.99	SWS	-	-	-	-	Dark measurement started.
11:54:36.41	USH	-	-	-	-	Idling

11:54:37.70	LSH	-	-	-	-	Idling
11:54:38.61	SWS	-	-	-	-	Idling
11:54:59.89	SWS	-	-	-	-	Manual scene recording started.
11:54:59.89	LSH	-	-	-	-	Manual scene recording started.
11:54:59.91	USH	-	-	-	-	Manual scene recording started.
11:56:01.49	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
11:56:02.55	SWS	-	-	-	-	Idling
11:56:03.02	SWS	-	-	-	-	Dark measurement started.
11:56:06.47	SWS	-	-	-	-	Idling
11:56:07.02	SWS	-	-	-	300	NIR int.time changed from 300ms to 300ms.
11:56:08.84	SWS	-	-	200	-	VIS int.time changed from 300ms to 200ms.
11:56:10.73	SWS	-	-	-	-	Dark measurement started.
11:56:14.40	SWS	-	-	-	-	Idling
11:56:15.72	SWS	-	-	-	-	Manual scene recording started.
11:57:02.41	---	-	-	-	-	*** At
11:57:16.89	---	-	-	-	-	*** At level of Cu
11:57:24.90	SWS	-	-	-	-	Warning: Clipping may be occurring.
11:57:25.56	---	-	-	-	-	*** Off for laqnding
11:57:28.67	SWS	-	-	-	-	Idling
13:18:55.54	---	-	-	-	-	
13:18:55.54	---	-	-	-	-	+++ SOFTWARE START/RESTART +++
13:18:55.54	---	-	-	-	-	+++ hh:mm:ss.ff / Instr / Posn / Period /
tVIS/ tNIR / Comment +++						
13:18:55.55	---	-	-	-	-	+++ Flight no. B397
13:18:55.55	---	-	-	-	-	
13:19:01.94	SWS	-	-	-	-	Telescope motor initialised.
13:19:10.17	SWS	0.0	-	-	-	Telescope sent to 90.000
13:19:11.30	SWS	90.0	-	-	-	Telescope stopped.
13:19:13.25	SWS	90.0	-	-	-	Telescope sent to 90.000
13:19:22.04	SWS	-	1000	-	-	Sample period changed from 250ms to 1000ms.
13:19:22.31	SWS	-	-	-	-	Initialization: VIS OK NIR OK
13:19:33.01	USH	-	-	-	-	Initialization: VIS OK NIR OK
13:19:34.79	USH	-	500	-	-	Sample period changed from 250ms to 500ms.
13:19:37.55	USH	-	1000	-	-	Sample period changed from 500ms to 1000ms.
13:19:46.94	USH	-	-	-	5	NIR int.time changed from 5ms to 5ms.
13:19:51.03	USH	-	-	100	-	VIS int.time changed from 5ms to 100ms.
13:19:51.04	USH	-	-	-	100	NIR int.time changed from 5ms to 100ms.
13:19:56.90	LSH	-	1000	-	-	Sample period changed from 250ms to 1000ms.
13:19:58.21	LSH	-	-	-	5	NIR int.time changed from 5ms to 5ms.
13:20:01.10	LSH	-	-	600	-	VIS int.time changed from 5ms to 600ms.
13:20:01.10	LSH	-	-	-	600	NIR int.time changed from 5ms to 600ms.
13:20:17.78	---	-	-	-	-	Reset shutters.
13:20:28.31	---	-	-	-	-	Reset shutters.
13:20:32.21	USH	-	-	-	-	Dark measurement started.
13:20:32.22	SWS	-	-	-	-	Dark measurement started.
13:20:33.48	SWS	-	-	-	-	Idling
13:20:35.17	USH	-	-	-	-	Idling
13:20:38.95	USH	-	-	-	-	Dark measurement started.
13:20:41.38	USH	-	-	-	-	Idling
13:20:45.30	SWS	-	-	-	10	NIR int.time changed from 10ms to 10ms.
13:20:48.81	SWS	-	-	600	-	VIS int.time changed from 10ms to 600ms.
13:20:48.81	SWS	-	-	-	600	NIR int.time changed from 10ms to 600ms.
13:20:50.37	SWS	-	-	-	-	Dark measurement started.
13:20:55.59	LSH	-	-	-	-	Initialization: VIS OK NIR OK
13:20:57.28	SWS	-	-	-	-	Idling
13:21:05.08	LSH	-	-	-	1000	NIR int.time changed from 1000ms to 1000ms.
13:21:06.29	LSH	-	-	-	1000	NIR int.time changed from 1000ms to 1000ms.
13:21:07.67	LSH	-	-	600	-	VIS int.time changed from 1000ms to 600ms.
13:21:07.67	LSH	-	-	-	600	NIR int.time changed from 1000ms to 600ms.
13:21:09.97	LSH	-	-	-	600	NIR int.time changed from 600ms to 600ms.
13:21:11.48	LSH	-	-	-	600	NIR int.time changed from 600ms to 600ms.
13:21:13.23	LSH	-	-	1000	-	VIS int.time changed from 600ms to 1000ms.
13:21:13.23	LSH	-	-	-	1000	NIR int.time changed from 600ms to 1000ms.
13:21:13.83	LSH	-	-	-	-	Dark measurement started.
13:21:15.31	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:21:24.54	LSH	-	-	-	-	Idling
13:21:53.90	USH	-	-	-	-	Dark measurement started.
13:21:53.91	LSH	-	-	-	-	Dark measurement started.
13:21:53.92	SWS	-	-	-	-	Dark measurement started.

13:21:55.33	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:21:56.34	USH	-	-	-	-	Idling
13:22:00.75	SWS	-	-	-	-	Idling
13:22:04.56	LSH	-	-	-	-	Idling
13:22:17.23	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
13:22:19.58	USH	-	-	-	-	Manual scene sampling started - Not Recording!
13:22:24.38	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:22:33.50	USH	-	-	-	-	Idling
13:22:33.55	SWS	-	-	-	-	Idling
13:22:34.06	USH	-	-	-	-	Dark measurement started.
13:22:34.06	SWS	-	-	-	-	Dark measurement started.
13:22:34.17	LSH	-	-	-	-	Dark measurement started.
13:22:35.69	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:22:36.50	USH	-	-	-	-	Idling
13:22:40.70	SWS	-	-	-	-	Idling
13:22:44.92	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
13:22:46.66	SWS	-	-	100	-	VIS int.time changed from 600ms to 100ms.
13:22:46.66	SWS	-	-	-	100	NIR int.time changed from 600ms to 100ms.
13:22:48.54	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
13:22:49.86	SWS	-	-	-	-	Dark measurement started.
13:22:51.77	SWS	-	-	-	-	Idling
13:22:57.85	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
13:23:05.54	USH	-	-	-	-	Manual scene sampling started - Not Recording!
13:23:16.58	USH	-	-	-	-	Manual scene recording started.
13:23:18.61	LSH	-	-	-	-	Manual scene recording started.
13:23:24.50	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:23:31.10	USH	-	-	-	-	Manual scene sampling started - Not Recording!
13:23:41.42	USH	-	-	-	-	Idling
13:23:41.99	USH	-	-	-	-	Dark measurement started.
13:23:42.42	USH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:23:44.45	USH	-	-	-	-	Idling
13:23:46.10	---	-	-	-	-	Reset shutters.
13:23:52.07	USH	-	-	-	-	Dark measurement started.
13:23:54.50	USH	-	-	-	-	Idling
13:23:58.71	USH	-	-	100	-	VIS int.time changed from 200ms to 100ms.
13:23:58.72	USH	-	-	-	100	NIR int.time changed from 200ms to 100ms.
13:24:01.28	USH	-	-	-	-	Dark measurement started.
13:24:03.19	USH	-	-	-	-	Idling
13:24:04.88	USH	-	-	-	-	Manual scene sampling started - Not Recording!
13:24:10.68	USH	-	-	-	-	Manual scene recording started.
13:33:57.45	---	-	-	-	-	
13:33:57.45	---	-	-	-	-	+++ SOFTWARE START/RESTART +++
13:33:57.45	---	-	-	-	-	+++ hh:mm:ss.ff / Instr / Posn / Period /
tVIS/ tNIR / Comment +++						
13:33:57.45	---	-	-	-	-	+++ Flight no. B397
13:33:57.45	---	-	-	-	-	
13:34:04.06	SWS	-	-	-	-	Telescope motor initialised.
13:34:13.29	SWS	-	-	-	-	Initialization: VIS OK NIR OK
13:34:15.86	USH	-	-	-	-	Initialization: VIS OK NIR OK
13:34:17.16	LSH	-	-	-	-	Initialization: VIS OK NIR OK
13:34:22.97	LSH	-	1000	-	-	Sample period changed from 250ms to 1000ms.
13:34:29.11	USH	-	1000	-	-	Sample period changed from 250ms to 1000ms.
13:34:32.69	SWS	-	1000	-	-	Sample period changed from 250ms to 1000ms.
13:34:36.26	SWS	-	-	100	-	VIS int.time changed from 5ms to 100ms.
13:34:37.40	SWS	-	-	-	100	NIR int.time changed from 5ms to 100ms.
13:34:39.42	SWS	-	-	-	-	Dark measurement started.
13:34:40.21	SWS	-	-	-	-	Warning: Abnormally bright dark measurement.
13:34:41.33	SWS	-	-	-	-	Idling
13:34:42.75	---	-	-	-	-	Reset shutters.
13:34:45.96	SWS	-	-	-	-	Dark measurement started.
13:34:47.39	SWS	-	-	-	-	Idling
13:34:48.13	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:34:50.60	USH	-	-	-	5	NIR int.time changed from 5ms to 5ms.
13:34:54.23	USH	-	-	100	-	VIS int.time changed from 5ms to 100ms.
13:34:54.23	USH	-	-	-	100	NIR int.time changed from 5ms to 100ms.
13:34:56.31	USH	-	-	-	-	Dark measurement started.
13:34:58.00	USH	-	-	-	-	Idling
13:34:59.87	LSH	-	-	-	5	NIR int.time changed from 5ms to 5ms.
13:35:01.56	LSH	-	-	600	-	VIS int.time changed from 5ms to 600ms.

13:35:01.56	LSH	-	-	-	600	NIR int.time changed from 5ms to 600ms.
13:35:02.91	LSH	-	-	-	-	Dark measurement started.
13:35:03.99	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:35:09.61	LSH	-	-	-	-	Idling
13:35:12.82	USH	-	-	-	-	Dark measurement started.
13:35:14.26	USH	-	-	-	-	Idling
13:35:15.01	LSH	-	-	-	-	Dark measurement started.
13:35:15.84	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:35:19.42	USH	-	-	-	-	Manual scene recording started.
13:35:21.47	LSH	-	-	-	-	Idling
13:35:22.20	LSH	-	-	-	-	Manual scene recording started.
13:43:30.88	SWS	-90.4	-	-	-	Telescope sent to 0.000
13:43:31.99	SWS	0.0	-	-	-	Telescope stopped.
13:43:36.15	SWS	-	-	-	-	Telescope disabled.
13:43:46.75	SWS	-	-	-	-	Telescope motor initialised.
13:43:55.02	SWS	0.0	-	-	-	Telescope sent to 174.000
13:43:56.69	SWS	173.6	-	-	-	Telescope stopped.
13:43:59.84	SWS	174.0	-	-	-	Telescope sent to -6.000
13:44:01.50	SWS	-2.5	-	-	-	Telescope stopped.
13:44:03.46	SWS	-6.0	-	-	-	Telescope sent to 174.000
13:44:05.14	SWS	170.0	-	-	-	Telescope stopped.
13:44:16.95	USH	-	-	-	-	Idling
13:44:17.11	SWS	-	-	-	-	Idling
13:44:17.39	LSH	-	-	-	-	Idling
13:44:18.52	---	-	-	-	-	Reset shutters.
13:44:29.04	LSH	-	100	-	-	Sample period changed from 1000ms to 100ms.
13:44:32.57	USH	-	100	-	-	Sample period changed from 1000ms to 100ms.
13:44:36.29	SWS	-	100	-	-	Sample period changed from 1000ms to 100ms.
13:44:47.76	SWS	-	-	-	-	Dark measurement started.
13:44:47.76	LSH	-	-	-	-	Dark measurement started.
13:44:47.77	USH	-	-	-	-	Dark measurement started.
13:44:48.78	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:44:49.19	SWS	-	-	-	-	Idling
13:44:49.60	USH	-	-	-	-	Idling
13:44:50.91	SWS	-	-	-	-	Dark measurement started.
13:44:50.91	USH	-	-	-	-	Dark measurement started.
13:44:52.34	SWS	-	-	-	-	Idling
13:44:52.54	USH	-	-	-	-	Idling
13:44:55.03	LSH	-	-	-	-	Idling
13:47:11.14	---	-	-	-	-	Reset shutters.
13:47:15.14	SWS	-	-	-	-	Dark measurement started.
13:47:15.14	LSH	-	-	-	-	Dark measurement started.
13:47:15.15	USH	-	-	-	-	Dark measurement started.
13:47:16.36	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:47:17.11	USH	-	-	-	-	Idling
13:47:17.17	SWS	-	-	-	-	Idling
13:47:19.91	USH	-	-	-	-	Dark measurement started.
13:47:19.92	SWS	-	-	-	-	Dark measurement started.
13:47:21.36	USH	-	-	-	-	Idling
13:47:21.56	SWS	-	-	-	-	Idling
13:47:22.01	LSH	-	-	-	-	Idling
13:47:24.77	USH	-	-	-	-	Manual scene recording started.
13:47:24.78	LSH	-	-	-	-	Manual scene recording started.
13:47:24.78	SWS	-	-	-	-	Manual scene recording started.
13:47:30.92	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:47:31.75	SWS	-	-	-	-	Idling
13:47:46.64	SWS	174.0	-	-	-	Telescope sent to 0.000
13:47:48.28	SWS	0.5	-	-	-	Telescope stopped.
13:47:50.47	SWS	-	-	200	-	VIS int.time changed from 100ms to 200ms.
13:47:50.47	SWS	-	-	-	200	NIR int.time changed from 100ms to 200ms.
13:47:52.33	SWS	-	-	-	-	Dark measurement started.
13:47:55.24	SWS	-	-	-	-	Idling
13:47:57.02	SWS	0.0	-	-	-	Telescope sent to 0.000
13:47:59.03	SWS	-	-	-	-	Manual scene recording started.
13:48:23.68	---	-	-	-	-	*** Freezer temp 10 deg C
13:50:21.61	SWS	-	-	-	-	Warning: Clipping may be occurring.
13:50:23.84	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:50:24.76	SWS	-	-	-	-	Idling
13:50:27.93	SWS	-	-	100	-	VIS int.time changed from 200ms to 100ms.



13:50:27.93	SWS	-	-	-	100	NIR int.time changed from 200ms to 100ms.
13:50:37.82	SWS	-	-	-	-	Dark measurement started.
13:50:39.75	SWS	-	-	-	-	Idling
13:50:45.10	SWS	-	-	50	-	VIS int.time changed from 100ms to 50ms.
13:50:45.11	SWS	-	-	-	50	NIR int.time changed from 100ms to 50ms.
13:50:46.37	SWS	-	-	-	-	Dark measurement started.
13:50:47.78	SWS	-	-	-	-	Idling
13:50:50.20	SWS	-	-	-	-	Manual scene recording started.
13:51:14.63	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:51:15.40	SWS	-	-	-	-	Idling
13:51:16.75	SWS	-	-	-	50	NIR int.time changed from 50ms to 50ms.
13:51:18.91	SWS	-	-	-	100	NIR int.time changed from 50ms to 100ms.
13:51:20.31	SWS	-	-	-	-	Dark measurement started.
13:51:22.00	SWS	-	-	-	-	Idling
13:51:23.05	SWS	-	-	-	-	Manual scene recording started.
13:51:40.53	SWS	-	-	-	50	NIR int.time changed from 100ms to 50ms.
13:51:42.41	SWS	-	-	-	-	Dark measurement started.
13:51:43.35	SWS	-	-	-	-	Manual scene recording started.
13:51:45.64	SWS	-	-	-	50	NIR int.time changed from 50ms to 50ms.
13:51:47.99	SWS	-	-	-	100	NIR int.time changed from 50ms to 100ms.
13:51:49.24	SWS	-	-	-	-	Dark measurement started.
13:51:50.68	SWS	-	-	-	-	Manual scene recording started.
13:53:05.33	SWS	-	-	-	-	Idling
13:53:05.34	USH	-	-	-	-	Idling
13:53:05.69	LSH	-	-	-	-	Idling
13:53:08.29	---	-	-	-	-	Reset shutters.
13:53:13.93	SWS	-	-	-	-	Dark measurement started.
13:53:13.93	LSH	-	-	-	-	Dark measurement started.
13:53:13.95	USH	-	-	-	-	Dark measurement started.
13:53:14.96	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:53:15.49	SWS	-	-	-	-	Idling
13:53:15.78	USH	-	-	-	-	Idling
13:53:20.57	LSH	-	-	-	-	Idling
13:54:20.72	SWS	-	-	-	-	Dark measurement started.
13:54:20.72	LSH	-	-	-	-	Dark measurement started.
13:54:20.75	USH	-	-	-	-	Dark measurement started.
13:54:21.74	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:54:22.15	SWS	-	-	-	-	Idling
13:54:22.54	USH	-	-	-	-	Idling
13:54:27.36	LSH	-	-	-	-	Idling
13:55:10.08	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:55:10.08	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
13:55:10.09	USH	-	-	-	-	Manual scene sampling started - Not Recording!
13:55:58.59	USH	-	-	-	-	Idling
13:55:58.73	LSH	-	-	-	-	Idling
13:55:58.80	SWS	-	-	-	-	Idling
13:56:04.12	SWS	-	-	-	-	Dark measurement started.
13:56:04.13	LSH	-	-	-	-	Dark measurement started.
13:56:04.13	USH	-	-	-	-	Dark measurement started.
13:56:05.15	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:56:05.56	SWS	-	-	-	-	Idling
13:56:05.96	USH	-	-	-	-	Idling
13:56:10.77	LSH	-	-	-	-	Idling
13:56:23.70	USH	-	-	-	-	Dark measurement started.
13:56:23.70	LSH	-	-	-	-	Dark measurement started.
13:56:23.72	SWS	-	-	-	-	Dark measurement started.
13:56:24.72	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:56:25.14	USH	-	-	-	-	Idling
13:56:25.54	SWS	-	-	-	-	Idling
13:56:26.16	SWS	-	-	-	-	Dark measurement started.
13:56:26.17	USH	-	-	-	-	Dark measurement started.
13:56:27.60	SWS	-	-	-	-	Idling
13:56:27.80	USH	-	-	-	-	Idling
13:56:30.36	LSH	-	-	-	-	Idling
13:56:45.84	SWS	-	-	-	-	Dark measurement started.
13:56:45.85	LSH	-	-	-	-	Dark measurement started.
13:56:45.85	USH	-	-	-	-	Dark measurement started.
13:56:46.88	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:56:47.41	SWS	-	-	-	-	Idling

13:56:47.44	SWS	-	-	-	-	Idling
13:56:47.70	USH	-	-	-	-	Idling
13:56:52.54	LSH	-	-	-	-	Idling
13:58:25.41	---	-	-	-	-	*** Freezer 11 deg C
13:58:34.06	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
13:58:34.07	USH	-	-	-	-	Manual scene sampling started - Not Recording!
13:58:34.08	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
13:58:56.88	USH	-	-	-	-	Idling
13:58:56.92	LSH	-	-	-	-	Idling
13:58:57.01	SWS	-	-	-	-	Idling
13:59:00.04	---	-	-	-	-	Reset shutters.
13:59:04.18	SWS	-	-	-	-	Dark measurement started.
13:59:04.18	LSH	-	-	-	-	Dark measurement started.
13:59:04.19	USH	-	-	-	-	Dark measurement started.
13:59:05.20	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
13:59:05.61	SWS	-	-	-	-	Idling
13:59:06.02	USH	-	-	-	-	Idling
13:59:07.25	SWS	-	-	-	-	Dark measurement started.
13:59:07.27	USH	-	-	-	-	Dark measurement started.
13:59:08.68	SWS	-	-	-	-	Idling
13:59:08.88	USH	-	-	-	-	Idling
13:59:09.39	SWS	-	-	-	-	Dark measurement started.
13:59:09.41	USH	-	-	-	-	Dark measurement started.
13:59:10.84	LSH	-	-	-	-	Idling
13:59:10.84	SWS	-	-	-	-	Idling
13:59:11.04	USH	-	-	-	-	Idling
14:00:54.15	SWS	-	-	-	-	Manual scene recording started.
14:00:54.16	LSH	-	-	-	-	Manual scene recording started.
14:00:54.16	USH	-	-	-	-	Manual scene recording started.
14:01:59.32	SWS	-	-	-	-	Warning: Clipping may be occurring.
14:02:06.20	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:02:08.89	SWS	-	-	-	-	Idling
14:02:09.16	SWS	-	-	-	-	Dark measurement started.
14:02:10.59	SWS	-	-	-	-	Idling
14:02:15.66	SWS	-	-	30	-	VIS int.time changed from 50ms to 30ms.
14:02:17.58	SWS	-	-	-	-	Dark measurement started.
14:02:19.25	SWS	-	-	-	-	Idling
14:02:20.11	SWS	-	-	-	-	Manual scene recording started.
14:02:29.10	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:02:29.92	SWS	-	-	-	-	Idling
14:02:31.11	SWS	-	-	-	-	Dark measurement started.
14:02:32.60	SWS	-	-	-	-	Idling
14:02:32.97	SWS	-0.0	-	-	-	Telescope sent to 180.000
14:02:34.66	SWS	177.5	-	-	-	Telescope stopped.
14:02:37.61	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
14:02:42.56	SWS	-	-	35	-	VIS int.time changed from 100ms to 35ms.
14:02:46.12	SWS	-	-	30	-	VIS int.time changed from 35ms to 30ms.
14:02:48.35	SWS	180.0	-	-	-	Telescope sent to 180.000
14:02:49.29	SWS	-	-	-	-	Dark measurement started.
14:02:50.72	SWS	-	-	-	-	Idling
14:02:51.15	SWS	-	-	-	-	Manual scene recording started.
14:03:03.69	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:03:06.92	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
14:03:09.11	SWS	-	-	-	-	Dark measurement started.
14:03:10.55	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:03:12.61	SWS	-	-	-	-	Manual scene recording started.
14:04:37.06	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:04:37.89	SWS	-	-	-	-	Idling
14:04:40.79	SWS	180.0	-	-	-	Telescope sent to 0.000
14:04:42.45	SWS	3.3	-	-	-	Telescope stopped.
14:04:43.46	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
14:04:45.79	SWS	-	-	-	-	Dark measurement started.
14:04:47.48	SWS	-	-	-	-	Idling
14:04:48.34	SWS	0.0	-	-	-	Telescope sent to 0.000
14:04:52.32	SWS	-	-	-	-	Manual scene recording started.
14:05:17.42	USH	-	-	-	-	Manual scene sampling started - Not Recording!
14:05:18.24	USH	-	-	-	-	Idling
14:05:18.62	USH	-	-	-	-	Dark measurement started.
14:05:20.05	USH	-	-	-	-	Idling

14:05:20.74	USH	-	-	-	-	Manual scene recording started.
14:05:22.46	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
14:05:23.78	LSH	-	-	-	-	Idling
14:05:24.20	LSH	-	-	-	-	Dark measurement started.
14:05:25.02	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:05:30.65	LSH	-	-	-	-	Idling
14:05:50.83	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:05:51.65	SWS	-	-	-	-	Idling
14:05:53.50	SWS	0.0	-	-	-	Telescope sent to 180.000
14:05:54.17	SWS	-	-	-	-	Dark measurement started.
14:05:55.19	SWS	176.8	-	-	-	Telescope stopped.
14:05:55.61	SWS	-	-	-	-	Idling
14:05:59.28	SWS	-	-	-	-	Dark measurement started.
14:06:00.73	SWS	-	-	-	-	Idling
14:06:04.00	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
14:06:13.31	SWS	-	-	-	-	Manual scene recording started.
14:07:22.70	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:07:27.12	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
14:07:29.36	SWS	-	-	-	-	Dark measurement started.
14:07:30.81	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:07:31.63	SWS	-	-	-	-	Manual scene recording started.
14:08:41.70	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:08:42.53	SWS	-	-	-	-	Idling
14:08:45.70	SWS	-	-	-	-	Dark measurement started.
14:08:47.14	SWS	-	-	-	-	Idling
14:08:47.89	SWS	180.0	-	-	-	Telescope sent to 0.000
14:08:49.57	SWS	2.7	-	-	-	Telescope stopped.
14:08:50.79	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
14:08:54.32	SWS	0.0	-	-	-	Telescope sent to 0.000
14:08:54.85	SWS	-	-	-	-	Dark measurement started.
14:08:56.53	SWS	-	-	-	-	Idling
14:08:56.92	SWS	-	-	-	-	Manual scene recording started.
14:09:24.94	SWS	-	-	-	-	Warning: Clipping may be occurring.
14:09:55.82	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:09:56.64	SWS	-	-	-	-	Idling
14:10:04.69	SWS	0.0	-	-	-	Telescope sent to 180.000
14:10:06.37	SWS	176.8	-	-	-	Telescope stopped.
14:10:08.48	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
14:10:09.66	SWS	-	-	-	-	Dark measurement started.
14:10:11.36	SWS	-	-	-	-	Idling
14:10:13.96	SWS	180.0	-	-	-	Telescope sent to 180.000
14:10:14.96	SWS	-	-	-	-	Manual scene recording started.
14:10:21.98	USH	-	-	-	-	Manual scene sampling started - Not Recording!
14:10:22.80	USH	-	-	-	-	Idling
14:10:23.32	USH	-	-	-	-	Dark measurement started.
14:10:24.76	USH	-	-	-	-	Idling
14:10:25.24	USH	-	-	-	-	Manual scene recording started.
14:10:30.19	LSH	-	-	-	-	Manual scene recording started.
14:10:32.88	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
14:10:34.21	LSH	-	-	-	-	Idling
14:10:35.30	LSH	-	-	-	-	Dark measurement started.
14:10:36.12	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:10:41.75	LSH	-	-	-	-	Idling
14:10:42.20	LSH	-	-	-	-	Manual scene recording started.
14:11:45.85	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:11:46.67	SWS	-	-	-	-	Idling
14:11:47.59	SWS	-	-	-	-	Dark measurement started.
14:11:49.03	SWS	-	-	-	-	Idling
14:11:54.22	SWS	180.0	-	-	-	Telescope sent to 0.000
14:11:55.91	SWS	1.4	-	-	-	Telescope stopped.
14:11:57.47	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
14:11:59.12	SWS	-	-	-	-	Dark measurement started.
14:12:00.93	SWS	-	-	-	-	Idling
14:12:02.18	SWS	-	-	-	-	Manual scene recording started.
14:12:03.00	SWS	-	-	-	-	Warning: Clipping may be occurring.
14:12:04.20	SWS	0.0	-	-	-	Telescope sent to 0.000
14:12:05.73	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:12:06.60	SWS	-	-	-	-	Idling
14:12:10.63	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.

14:12:12.00	SWS	-	-	-	-	Dark measurement started.
14:12:13.69	SWS	-	-	-	-	Idling
14:12:15.40	SWS	-	-	-	-	Manual scene recording started.
14:13:30.39	SWS	-	-	-	-	Idling
14:13:30.41	USH	-	-	-	-	Idling
14:13:30.46	LSH	-	-	-	-	Idling
14:13:32.67	---	-	-	-	-	Reset shutters.
14:13:37.04	SWS	-	-	-	-	Dark measurement started.
14:13:37.06	LSH	-	-	-	-	Dark measurement started.
14:13:37.07	USH	-	-	-	-	Dark measurement started.
14:13:38.08	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:13:38.49	SWS	-	-	-	-	Idling
14:13:38.90	USH	-	-	-	-	Idling
14:13:43.71	LSH	-	-	-	-	Idling
14:13:45.49	SWS	-	-	-	-	Dark measurement started.
14:13:45.49	LSH	-	-	-	-	Dark measurement started.
14:13:45.49	USH	-	-	-	-	Dark measurement started.
14:13:46.92	SWS	-	-	-	-	Idling
14:13:47.33	USH	-	-	-	-	Idling
14:13:52.13	LSH	-	-	-	-	Idling
14:14:05.54	USH	-	-	-	-	Dark measurement started.
14:14:05.55	LSH	-	-	-	-	Dark measurement started.
14:14:05.56	SWS	-	-	-	-	Dark measurement started.
14:14:06.57	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:14:06.98	USH	-	-	-	-	Idling
14:14:07.39	SWS	-	-	-	-	Idling
14:14:11.90	SWS	0.0	-	-	-	Telescope sent to 180.000
14:14:12.22	LSH	-	-	-	-	Idling
14:14:13.55	SWS	173.8	-	-	-	Telescope stopped.
14:14:14.59	SWS	180.0	-	-	-	Telescope sent to 180.000
14:14:27.96	USH	-	-	-	-	Dark measurement started.
14:14:27.96	LSH	-	-	-	-	Dark measurement started.
14:14:27.97	SWS	-	-	-	-	Dark measurement started.
14:14:28.99	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:14:29.40	USH	-	-	-	-	Idling
14:14:29.81	SWS	-	-	-	-	Idling
14:14:34.63	LSH	-	-	-	-	Idling
14:15:21.20	SWS	-	-	-	-	Dark measurement started.
14:15:21.21	LSH	-	-	-	-	Dark measurement started.
14:15:21.23	USH	-	-	-	-	Dark measurement started.
14:15:22.23	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:15:22.63	SWS	-	-	-	-	Idling
14:15:23.03	USH	-	-	-	-	Idling
14:15:26.10	SWS	-	-	-	-	Dark measurement started.
14:15:26.10	USH	-	-	-	-	Dark measurement started.
14:15:27.53	SWS	-	-	-	-	Idling
14:15:27.75	USH	-	-	-	-	Idling
14:15:27.84	LSH	-	-	-	-	Idling
14:15:28.14	SWS	-	-	-	-	Dark measurement started.
14:15:28.15	LSH	-	-	-	-	Dark measurement started.
14:15:28.16	USH	-	-	-	-	Dark measurement started.
14:15:29.59	SWS	-	-	-	-	Idling
14:15:30.00	USH	-	-	-	-	Idling
14:15:30.57	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:15:30.57	USH	-	-	-	-	Manual scene sampling started - Not Recording!
14:15:34.78	LSH	-	-	-	-	Idling
14:15:35.50	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
14:15:41.98	SWS	-	-	-	-	Idling
14:15:42.20	USH	-	-	-	-	Idling
14:15:42.43	LSH	-	-	-	-	Idling
14:15:44.60	---	-	-	-	-	Reset shutters.
14:15:51.42	USH	-	-	-	-	Manual scene sampling started - Not Recording!
14:15:51.42	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
14:15:51.43	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:16:00.34	USH	-	-	-	-	Dark measurement started.
14:16:00.73	SWS	-	-	-	-	Dark measurement started.
14:16:00.81	LSH	-	-	-	-	Dark measurement started.
14:16:01.75	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:16:01.77	USH	-	-	-	-	Manual scene sampling started - Not Recording!

14:16:02.17	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:16:04.47	USH	-	-	-	-	Dark measurement started.
14:16:04.87	SWS	-	-	-	-	Dark measurement started.
14:16:05.91	USH	-	-	-	-	Manual scene sampling started - Not Recording!
14:16:06.32	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:16:07.38	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
14:16:26.88	SWS	-	-	-	-	Idling
14:16:26.89	USH	-	-	-	-	Idling
14:16:27.44	LSH	-	-	-	-	Idling
14:16:36.99	SWS	-	-	-	-	Dark measurement started.
14:16:37.00	LSH	-	-	-	-	Dark measurement started.
14:16:37.00	USH	-	-	-	-	Dark measurement started.
14:16:38.02	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:16:38.43	SWS	-	-	-	-	Idling
14:16:38.83	USH	-	-	-	-	Idling
14:16:43.65	LSH	-	-	-	-	Idling
14:17:40.54	SWS	-	-	-	-	Manual scene recording started.
14:17:40.54	LSH	-	-	-	-	Manual scene recording started.
14:17:40.55	USH	-	-	-	-	Manual scene recording started.
14:19:15.55	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:19:16.37	SWS	-	-	-	-	Idling
14:19:17.96	SWS	180.0	-	-	-	Telescope sent to 0.000
14:19:18.82	SWS	-	-	-	-	Dark measurement started.
14:19:19.66	SWS	2.6	-	-	-	Telescope stopped.
14:19:20.27	SWS	-	-	-	-	Idling
14:19:21.14	SWS	0.0	-	-	-	Telescope sent to 0.000
14:19:22.43	SWS	-	-	-	-	Manual scene recording started.
14:20:56.09	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:20:56.91	SWS	-	-	-	-	Idling
14:20:58.81	SWS	-0.0	-	-	-	Telescope sent to 180.000
14:20:59.88	SWS	-	-	-	-	Dark measurement started.
14:21:00.21	SWS	-	-	-	-	Warning: Abnormally bright dark measurement.
14:21:00.49	SWS	176.9	-	-	-	Telescope stopped.
14:21:01.36	SWS	-	-	-	-	Idling
14:21:03.03	SWS	180.0	-	-	-	Telescope sent to 180.000
14:21:04.86	SWS	-	-	-	-	Dark measurement started.
14:21:05.19	SWS	-	-	-	-	Warning: Abnormally bright dark measurement.
14:21:06.34	SWS	-	-	-	-	Idling
14:21:08.33	---	-	-	-	-	Reset shutters.
14:21:11.92	SWS	-	-	-	-	Dark measurement started.
14:21:13.35	SWS	-	-	-	-	Idling
14:21:13.91	SWS	-	-	-	-	Manual scene recording started.
14:21:19.27	---	-	-	-	-	Reset shutters.
14:21:35.87	---	-	-	-	-	*** SWS shutters sticking
14:21:52.62	USH	-	-	-	-	Manual scene sampling started - Not Recording!
14:21:53.44	USH	-	-	-	-	Idling
14:21:54.21	USH	-	-	-	-	Dark measurement started.
14:21:55.64	USH	-	-	-	-	Idling
14:21:57.90	USH	-	-	-	-	Manual scene recording started.
14:21:59.59	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
14:22:00.92	LSH	-	-	-	-	Idling
14:22:01.32	LSH	-	-	-	-	Dark measurement started.
14:22:02.14	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:22:07.78	LSH	-	-	-	-	Idling
14:22:08.59	LSH	-	-	-	-	Manual scene recording started.
14:22:40.21	---	-	-	-	-	*** Freezer temp 10 deg C
14:23:23.99	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:23:24.81	SWS	-	-	-	-	Idling
14:23:25.97	SWS	-	-	-	-	Dark measurement started.
14:23:27.41	SWS	-	-	-	-	Idling
14:23:29.61	SWS	180.0	-	-	-	Telescope sent to 0.000
14:23:31.15	SWS	-	-	-	-	Dark measurement started.
14:23:31.30	SWS	1.5	-	-	-	Telescope stopped.
14:23:32.58	SWS	-	-	-	-	Idling
14:23:36.81	SWS	0.0	-	-	-	Telescope sent to 0.000
14:23:38.19	SWS	-	-	-	-	Manual scene recording started.
14:25:11.68	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:25:12.51	SWS	-	-	-	-	Idling
14:25:14.57	SWS	-0.0	-	-	-	Telescope sent to 180.000

14:25:15.79	SWS	-	-	-	-	Dark measurement started.
14:25:16.12	SWS	-	-	-	-	Warning: Abnormally bright dark measurement.
14:25:16.26	SWS	177.5	-	-	-	Telescope stopped.
14:25:17.25	SWS	-	-	-	-	Idling
14:25:18.48	SWS	180.0	-	-	-	Telescope sent to 180.000
14:25:24.67	SWS	-	-	-	-	Dark measurement started.
14:25:25.00	SWS	-	-	-	-	Warning: Abnormally bright dark measurement.
14:25:26.12	SWS	-	-	-	-	Idling
14:25:28.25	---	-	-	-	-	Reset shutters.
14:25:31.84	SWS	-	-	-	-	Dark measurement started.
14:25:33.28	SWS	-	-	-	-	Idling
14:25:34.64	SWS	-	-	-	-	Manual scene recording started.
14:25:39.65	USH	-	-	-	-	Manual scene sampling started - Not Recording!
14:25:40.47	USH	-	-	-	-	Idling
14:25:41.36	USH	-	-	-	-	Dark measurement started.
14:25:42.80	USH	-	-	-	-	Idling
14:25:43.50	USH	-	-	-	-	Manual scene recording started.
14:25:46.03	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
14:25:47.35	LSH	-	-	-	-	Idling
14:25:48.02	LSH	-	-	-	-	Dark measurement started.
14:25:48.85	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:25:54.48	LSH	-	-	-	-	Idling
14:25:54.98	LSH	-	-	-	-	Manual scene recording started.
14:27:08.65	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:27:09.47	SWS	-	-	-	-	Idling
14:27:10.91	USH	-	-	-	-	Idling
14:27:11.42	LSH	-	-	-	-	Idling
14:27:13.89	---	-	-	-	-	Reset shutters.
14:27:17.09	---	-	-	-	-	Reset shutters.
14:27:20.55	SWS	-	-	-	-	Dark measurement started.
14:27:20.56	LSH	-	-	-	-	Dark measurement started.
14:27:20.56	USH	-	-	-	-	Dark measurement started.
14:27:21.58	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:27:21.99	SWS	-	-	-	-	Idling
14:27:22.39	USH	-	-	-	-	Idling
14:27:23.02	SWS	180.0	-	-	-	Telescope sent to 0.000
14:27:24.71	SWS	1.4	-	-	-	Telescope stopped.
14:27:26.14	SWS	-0.0	-	-	-	Telescope sent to 0.000
14:27:27.21	LSH	-	-	-	-	Idling
14:27:28.07	SWS	-	-	-	-	Manual scene recording started.
14:27:31.78	USH	-	-	-	-	Manual scene recording started.
14:27:34.44	LSH	-	-	-	-	Manual scene recording started.
14:27:44.53	SWS	-	-	-	-	Idling
14:27:44.53	USH	-	-	-	-	Idling
14:27:44.63	LSH	-	-	-	-	Idling
14:27:55.96	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
14:27:58.93	SWS	-	-	-	-	Dark measurement started.
14:28:00.60	SWS	-	-	-	-	Idling
14:28:17.07	USH	-	-	-	-	Dark measurement started.
14:28:17.08	LSH	-	-	-	-	Dark measurement started.
14:28:17.08	SWS	-	-	-	-	Dark measurement started.
14:28:18.11	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:28:18.52	USH	-	-	-	-	Idling
14:28:18.92	SWS	-	-	-	-	Idling
14:28:23.72	LSH	-	-	-	-	Idling
14:30:14.19	SWS	-	-	-	-	Dark measurement started.
14:30:14.20	LSH	-	-	-	-	Dark measurement started.
14:30:14.21	USH	-	-	-	-	Dark measurement started.
14:30:15.42	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:30:16.17	USH	-	-	-	-	Idling
14:30:16.48	SWS	-	-	-	-	Idling
14:30:21.05	LSH	-	-	-	-	Idling
14:30:22.16	USH	-	-	-	-	Manual scene recording started.
14:30:23.59	LSH	-	-	-	-	Manual scene recording started.
14:30:33.46	USH	-	-	-	-	Manual scene sampling started - Not Recording!
14:30:35.02	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
14:31:36.70	LSH	-	-	-	-	Idling
14:31:37.03	USH	-	-	-	-	Idling
14:31:38.66	---	-	-	-	-	Reset shutters.



14:31:42.64	---	-	-	-	-	Reset shutters.
14:31:48.70	SWS	-	-	-	-	Dark measurement started.
14:31:48.71	LSH	-	-	-	-	Dark measurement started.
14:31:48.72	USH	-	-	-	-	Dark measurement started.
14:31:49.73	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:31:50.14	SWS	-	-	-	-	Idling
14:31:50.55	USH	-	-	-	-	Idling
14:31:55.36	LSH	-	-	-	-	Idling
14:31:58.19	SWS	-	-	-	-	Dark measurement started.
14:31:58.21	LSH	-	-	-	-	Dark measurement started.
14:31:58.21	USH	-	-	-	-	Dark measurement started.
14:31:59.23	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:31:59.64	SWS	-	-	-	-	Idling
14:32:00.05	USH	-	-	-	-	Idling
14:32:01.04	SWS	-	-	-	-	Dark measurement started.
14:32:01.05	USH	-	-	-	-	Dark measurement started.
14:32:02.49	SWS	-	-	-	-	Idling
14:32:02.69	USH	-	-	-	-	Idling
14:32:04.85	LSH	-	-	-	-	Idling
14:32:39.47	SWS	-	-	-	-	Manual scene recording started.
14:32:39.47	LSH	-	-	-	-	Manual scene recording started.
14:32:39.49	USH	-	-	-	-	Manual scene recording started.
14:34:12.62	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:34:13.44	SWS	-	-	-	-	Idling
14:34:15.45	SWS	0.0	-	-	-	Telescope sent to 180.000
14:34:15.88	SWS	-	-	-	-	Dark measurement started.
14:34:17.15	SWS	178.7	-	-	-	Telescope stopped.
14:34:17.32	SWS	-	-	-	-	Idling
14:34:20.26	SWS	180.0	-	-	-	Telescope sent to 180.000
14:34:21.84	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
14:34:22.66	SWS	-	-	-	-	Dark measurement started.
14:34:24.37	SWS	-	-	-	-	Idling
14:34:24.82	SWS	-	-	-	-	Manual scene recording started.
14:35:56.84	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:36:00.78	SWS	-	-	-	-	Dark measurement started.
14:36:02.25	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:36:02.71	SWS	180.0	-	-	-	Telescope sent to 0.000
14:36:04.39	SWS	2.0	-	-	-	Telescope stopped.
14:36:09.78	SWS	-	-	75	-	VIS int.time changed from 30ms to 75ms.
14:36:12.92	SWS	-	-	100	-	VIS int.time changed from 75ms to 100ms.
14:36:14.76	SWS	-	-	-	-	Dark measurement started.
14:36:16.22	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:36:16.55	SWS	0.0	-	-	-	Telescope sent to 0.000
14:36:17.67	SWS	-	-	-	-	Manual scene recording started.
14:36:18.12	SWS	-	-	-	-	Idling
14:36:39.45	USH	-	-	-	-	Manual scene sampling started - Not Recording!
14:36:40.30	USH	-	-	-	-	Idling
14:36:40.86	USH	-	-	-	-	Dark measurement started.
14:36:42.31	USH	-	-	-	-	Idling
14:36:43.19	USH	-	-	-	-	Manual scene recording started.
14:36:45.95	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
14:36:47.28	LSH	-	-	-	-	Idling
14:36:47.88	LSH	-	-	-	-	Dark measurement started.
14:36:48.71	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:36:54.34	LSH	-	-	-	-	Idling
14:36:55.08	LSH	-	-	-	-	Manual scene recording started.
14:37:49.85	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:37:50.67	SWS	-	-	-	-	Idling
14:37:52.68	SWS	-0.0	-	-	-	Telescope sent to 180.000
14:37:53.28	SWS	-	-	-	-	Dark measurement started.
14:37:54.37	SWS	177.5	-	-	-	Telescope stopped.
14:37:54.73	SWS	-	-	-	-	Idling
14:37:58.23	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
14:37:59.28	SWS	-	-	-	-	Dark measurement started.
14:38:01.00	SWS	-	-	-	-	Idling
14:38:01.44	SWS	180.0	-	-	-	Telescope sent to 180.000
14:38:02.24	SWS	-	-	-	-	Manual scene recording started.
14:39:34.36	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:39:35.81	SWS	-	-	-	-	Idling

14:39:37.17	SWS	180.0	-	-	-	Telescope sent to 0.000
14:39:38.43	SWS	-	-	-	-	Dark measurement started.
14:39:38.87	SWS	2.7	-	-	-	Telescope stopped.
14:39:39.87	SWS	-	-	-	-	Idling
14:39:43.41	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
14:39:44.07	SWS	-	-	-	-	Dark measurement started.
14:39:45.84	SWS	-0.0	-	-	-	Telescope sent to 0.000
14:39:45.90	SWS	-	-	-	-	Idling
14:39:47.32	SWS	-	-	-	-	Manual scene recording started.
14:39:51.04	USH	-	-	-	-	Manual scene sampling started - Not Recording!
14:39:51.86	USH	-	-	-	-	Idling
14:39:52.70	USH	-	-	-	-	Dark measurement started.
14:39:54.14	USH	-	-	-	-	Idling
14:39:56.59	USH	-	-	-	-	Manual scene recording started.
14:39:58.26	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
14:39:59.59	LSH	-	-	-	-	Idling
14:40:00.01	LSH	-	-	-	-	Dark measurement started.
14:40:00.86	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:40:06.49	LSH	-	-	-	-	Idling
14:40:07.02	LSH	-	-	-	-	Manual scene recording started.
14:42:13.00	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:42:13.82	SWS	-	-	-	-	Idling
14:42:15.37	SWS	-0.0	-	-	-	Telescope sent to 180.000
14:42:17.09	SWS	179.1	-	-	-	Telescope stopped.
14:42:17.23	SWS	-	-	-	-	Dark measurement started.
14:42:18.68	SWS	-	-	-	-	Idling
14:42:20.54	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
14:42:21.65	SWS	-	-	-	-	Dark measurement started.
14:42:23.35	SWS	-	-	-	-	Idling
14:42:24.15	SWS	180.0	-	-	-	Telescope sent to 180.000
14:42:25.00	SWS	-	-	-	-	Manual scene recording started.
14:42:54.98	SWS	-	-	-	-	Idling
14:42:54.99	USH	-	-	-	-	Idling
14:42:55.30	LSH	-	-	-	-	Idling
14:42:58.22	---	-	-	-	-	Reset shutters.
14:43:02.01	---	-	-	-	-	Reset shutters.
14:43:06.56	USH	-	-	-	-	Dark measurement started.
14:43:06.58	SWS	-	-	-	-	Dark measurement started.
14:43:06.58	LSH	-	-	-	-	Dark measurement started.
14:43:07.60	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:43:08.01	SWS	-	-	-	-	Idling
14:43:08.42	USH	-	-	-	-	Idling
14:43:08.68	SWS	-	-	-	-	Dark measurement started.
14:43:08.68	USH	-	-	-	-	Dark measurement started.
14:43:10.12	SWS	-	-	-	-	Idling
14:43:10.32	USH	-	-	-	-	Idling
14:43:10.66	SWS	-	-	-	-	Dark measurement started.
14:43:10.66	USH	-	-	-	-	Dark measurement started.
14:43:12.13	SWS	-	-	-	-	Idling
14:43:12.33	USH	-	-	-	-	Idling
14:43:13.23	LSH	-	-	-	-	Idling
14:43:13.59	USH	-	-	-	-	Dark measurement started.
14:43:13.59	LSH	-	-	-	-	Dark measurement started.
14:43:13.60	SWS	-	-	-	-	Dark measurement started.
14:43:15.02	USH	-	-	-	-	Idling
14:43:15.43	SWS	-	-	-	-	Idling
14:43:15.85	SWS	-	-	-	-	Dark measurement started.
14:43:15.88	USH	-	-	-	-	Dark measurement started.
14:43:17.29	SWS	-	-	-	-	Idling
14:43:17.50	USH	-	-	-	-	Idling
14:43:17.98	USH	-	-	-	-	Dark measurement started.
14:43:17.98	SWS	-	-	-	-	Dark measurement started.
14:43:19.43	USH	-	-	-	-	Idling
14:43:19.62	SWS	-	-	-	-	Idling
14:43:20.28	LSH	-	-	-	-	Idling
14:43:24.95	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
14:43:26.77	USH	-	-	-	-	Manual scene sampling started - Not Recording!
14:43:26.78	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
14:43:26.78	SWS	-	-	-	-	Manual scene sampling started - Not Recording!

14:47:13.16	---	-	-	-	*** Freezer temp 11 deg C
14:47:27.81	SWS	-	-	-	Idling
14:47:27.82	USH	-	-	-	Idling
14:47:28.45	LSH	-	-	-	Idling
14:47:29.12	---	-	-	-	Reset shutters.
14:47:33.85	USH	-	-	-	Dark measurement started.
14:47:33.86	LSH	-	-	-	Dark measurement started.
14:47:33.86	SWS	-	-	-	Dark measurement started.
14:47:34.88	LSH	-	-	-	Warning: Abnormally bright dark measurement.
14:47:35.29	USH	-	-	-	Idling
14:47:35.69	SWS	-	-	-	Idling
14:47:40.51	LSH	-	-	-	Idling
14:48:18.81	USH	-	-	-	Manual scene sampling started - Not Recording!
14:48:18.81	LSH	-	-	-	Manual scene sampling started - Not Recording!
14:48:18.84	SWS	-	-	-	Manual scene sampling started - Not Recording!
14:48:21.29	SWS	-	-	-	Dark measurement started.
14:48:21.47	LSH	-	-	-	Dark measurement started.
14:48:21.51	USH	-	-	-	Dark measurement started.
14:48:22.31	LSH	-	-	-	Warning: Abnormally bright dark measurement.
14:48:22.74	SWS	-	-	-	Manual scene sampling started - Not Recording!
14:48:23.15	USH	-	-	-	Manual scene sampling started - Not Recording!
14:48:27.72	USH	-	-	-	Dark measurement started.
14:48:27.91	SWS	-	-	-	Dark measurement started.
14:48:27.96	LSH	-	-	-	Manual scene sampling started - Not Recording!
14:48:29.19	USH	-	-	-	Manual scene sampling started - Not Recording!
14:48:29.39	SWS	-	-	-	Manual scene sampling started - Not Recording!
14:48:42.07	SWS	-	-	-	Idling
14:48:42.48	USH	-	-	-	Idling
14:48:42.94	USH	-	-	-	Dark measurement started.
14:48:42.94	SWS	-	-	-	Dark measurement started.
14:48:42.96	LSH	-	-	-	Dark measurement started.
14:48:44.17	LSH	-	-	-	Warning: Abnormally bright dark measurement.
14:48:44.39	USH	-	-	-	Idling
14:48:44.59	SWS	-	-	-	Idling
14:48:46.61	USH	-	-	-	Dark measurement started.
14:48:46.61	SWS	-	-	-	Dark measurement started.
14:48:48.05	USH	-	-	-	Idling
14:48:48.25	SWS	-	-	-	Idling
14:48:49.79	LSH	-	-	-	Manual scene sampling started - Not Recording!
14:49:11.35	LSH	-	-	-	Idling
14:49:12.32	LSH	-	-	-	Dark measurement started.
14:49:13.15	LSH	-	-	-	Warning: Abnormally bright dark measurement.
14:49:18.78	LSH	-	-	-	Idling
14:49:43.84	SWS	-	-	-	Manual scene recording started.
14:49:43.85	LSH	-	-	-	Manual scene recording started.
14:49:43.87	USH	-	-	-	Manual scene recording started.
14:50:04.11	SWS	-	-	-	Idling
14:50:04.13	USH	-	-	-	Idling
14:50:04.20	LSH	-	-	-	Idling
14:50:11.71	SWS	180.0	-	-	Telescope sent to 0.000
14:50:13.41	SWS	1.9	-	-	Telescope stopped.
14:50:18.36	SWS	-0.0	-	-	Telescope sent to 0.000
14:50:20.57	SWS	-	-	-	Manual scene recording started.
14:50:39.47	SWS	-	-	-	Manual scene sampling started - Not Recording!
14:50:40.30	SWS	-	-	-	Idling
14:50:42.63	SWS	0.0	-	-	Telescope sent to 180.000
14:50:43.35	SWS	-	-	-	Dark measurement started.
14:50:44.32	SWS	177.4	-	-	Telescope stopped.
14:50:44.79	SWS	-	-	-	Idling
14:50:47.53	SWS	-	-	30	VIS int.time changed from 100ms to 30ms.
14:50:49.04	SWS	-	-	-	Dark measurement started.
14:50:50.75	SWS	-	-	-	Idling
14:50:51.57	SWS	180.0	-	-	Telescope sent to 180.000
14:51:15.02	SWS	-	-	-	Manual scene recording started.
14:51:15.02	LSH	-	-	-	Manual scene recording started.
14:51:15.02	USH	-	-	-	Manual scene recording started.
14:52:49.02	SWS	-	-	-	Manual scene sampling started - Not Recording!
14:52:49.87	SWS	-	-	-	Idling
14:52:51.40	SWS	180.0	-	-	Telescope sent to 0.000

14:52:52.10	SWS	-	-	-	-	Dark measurement started.
14:52:53.11	SWS	2.0	-	-	-	Telescope stopped.
14:52:53.56	SWS	-	-	-	-	Idling
14:52:55.82	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
14:52:56.78	SWS	-	-	-	-	Dark measurement started.
14:52:58.50	SWS	-	-	-	-	Idling
14:52:58.54	SWS	0.0	-	-	-	Telescope sent to 0.000
14:52:59.48	SWS	-	-	-	-	Manual scene recording started.
14:54:30.75	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:54:31.60	SWS	-	-	-	-	Idling
14:54:32.74	SWS	-	-	-	-	Dark measurement started.
14:54:34.18	SWS	-	-	-	-	Idling
14:54:34.46	SWS	0.0	-	-	-	Telescope sent to 180.000
14:54:36.18	SWS	179.4	-	-	-	Telescope stopped.
14:54:36.89	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
14:54:37.58	SWS	-	-	-	-	Dark measurement started.
14:54:39.29	SWS	-	-	-	-	Idling
14:54:39.84	SWS	180.0	-	-	-	Telescope sent to 180.000
14:54:40.46	SWS	-	-	-	-	Manual scene recording started.
14:54:45.87	USH	-	-	-	-	Manual scene sampling started - Not Recording!
14:54:46.70	USH	-	-	-	-	Idling
14:54:47.64	USH	-	-	-	-	Dark measurement started.
14:54:49.08	USH	-	-	-	-	Idling
14:54:49.94	USH	-	-	-	-	Manual scene recording started.
14:54:51.78	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
14:54:53.12	LSH	-	-	-	-	Idling
14:54:53.58	LSH	-	-	-	-	Dark measurement started.
14:54:54.41	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:55:00.04	LSH	-	-	-	-	Idling
14:55:00.39	LSH	-	-	-	-	Manual scene recording started.
14:56:41.50	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:56:42.33	SWS	-	-	-	-	Idling
14:56:43.74	SWS	180.0	-	-	-	Telescope sent to 0.000
14:56:44.49	SWS	-	-	-	-	Dark measurement started.
14:56:45.45	SWS	2.0	-	-	-	Telescope stopped.
14:56:45.94	SWS	-	-	-	-	Idling
14:56:48.33	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
14:56:49.53	SWS	-	-	-	-	Dark measurement started.
14:56:51.03	SWS	0.0	-	-	-	Telescope sent to 0.000
14:56:51.24	SWS	-	-	-	-	Idling
14:56:51.71	SWS	-	-	-	-	Manual scene recording started.
14:58:26.00	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
14:58:26.83	SWS	-	-	-	-	Idling
14:58:27.91	SWS	-	-	-	-	Dark measurement started.
14:58:29.38	SWS	-	-	-	-	Idling
14:58:29.39	SWS	0.0	-	-	-	Telescope sent to 180.000
14:58:31.13	SWS	179.7	-	-	-	Telescope stopped.
14:58:32.72	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
14:58:33.92	SWS	-	-	-	-	Dark measurement started.
14:58:35.58	SWS	180.0	-	-	-	Telescope sent to 180.000
14:58:35.63	SWS	-	-	-	-	Idling
14:58:36.32	SWS	-	-	-	-	Manual scene recording started.
14:58:39.24	USH	-	-	-	-	Manual scene sampling started - Not Recording!
14:58:40.06	USH	-	-	-	-	Idling
14:58:40.64	USH	-	-	-	-	Dark measurement started.
14:58:42.07	USH	-	-	-	-	Idling
14:58:42.56	USH	-	-	-	-	Manual scene recording started.
14:58:44.99	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
14:58:47.43	LSH	-	-	-	-	Idling
14:58:47.82	LSH	-	-	-	-	Dark measurement started.
14:58:48.64	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
14:58:54.27	LSH	-	-	-	-	Idling
14:58:54.66	LSH	-	-	-	-	Manual scene recording started.
15:00:23.78	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:00:24.61	SWS	-	-	-	-	Idling
15:00:25.45	SWS	-	-	-	-	Dark measurement started.
15:00:26.90	SWS	-	-	-	-	Idling
15:00:27.25	SWS	180.0	-	-	-	Telescope sent to 0.000
15:00:28.97	SWS	1.5	-	-	-	Telescope stopped.

15:00:29.92	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
15:00:30.52	SWS	-	-	-	-	Dark measurement started.
15:00:32.14	SWS	0.0	-	-	-	Telescope sent to 0.000
15:00:32.22	SWS	-	-	-	-	Idling
15:00:33.71	SWS	-	-	-	-	Manual scene recording started.
15:01:15.76	SWS	-	-	-	-	Idling
15:01:15.78	USH	-	-	-	-	Idling
15:01:16.02	LSH	-	-	-	-	Idling
15:01:19.01	---	-	-	-	-	Reset shutters.
15:01:24.92	---	-	-	-	-	Reset shutters.
15:01:28.91	SWS	-	-	-	-	Dark measurement started.
15:01:28.92	LSH	-	-	-	-	Dark measurement started.
15:01:28.93	USH	-	-	-	-	Dark measurement started.
15:01:29.94	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:01:30.36	SWS	-	-	-	-	Idling
15:01:30.76	USH	-	-	-	-	Idling
15:01:31.22	SWS	-	-	-	-	Dark measurement started.
15:01:31.24	USH	-	-	-	-	Dark measurement started.
15:01:32.68	SWS	-	-	-	-	Idling
15:01:32.91	USH	-	-	-	-	Idling
15:01:33.53	SWS	-	-	-	-	Dark measurement started.
15:01:33.53	USH	-	-	-	-	Dark measurement started.
15:01:35.00	SWS	-	-	-	-	Idling
15:01:35.18	USH	-	-	-	-	Idling
15:01:35.57	LSH	-	-	-	-	Idling
15:02:25.89	SWS	-	-	-	-	Dark measurement started.
15:02:25.89	LSH	-	-	-	-	Dark measurement started.
15:02:25.89	USH	-	-	-	-	Dark measurement started.
15:02:26.91	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:02:27.33	SWS	-	-	-	-	Idling
15:02:27.74	USH	-	-	-	-	Idling
15:02:32.54	LSH	-	-	-	-	Idling
15:02:47.06	SWS	-0.0	-	-	-	Telescope sent to 180.000
15:02:48.76	SWS	178.1	-	-	-	Telescope stopped.
15:02:49.77	SWS	180.0	-	-	-	Telescope sent to 180.000
15:03:20.44	---	-	-	-	-	*** Freezer temp 11 deg C
15:04:55.82	USH	-	-	-	-	Dark measurement started.
15:04:55.83	LSH	-	-	-	-	Dark measurement started.
15:04:55.84	SWS	-	-	-	-	Dark measurement started.
15:04:57.06	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:04:58.06	USH	-	-	-	-	Idling
15:04:58.21	SWS	-	-	-	-	Idling
15:04:58.65	SWS	-	-	-	-	Dark measurement started.
15:04:58.66	USH	-	-	-	-	Dark measurement started.
15:05:00.10	SWS	-	-	-	-	Idling
15:05:00.30	USH	-	-	-	-	Idling
15:05:02.28	USH	-	-	-	-	Manual scene recording started.
15:05:02.69	LSH	-	-	-	-	Idling
15:05:05.27	LSH	-	-	-	-	Manual scene recording started.
15:05:34.77	LSH	-	-	-	-	Idling
15:05:34.79	USH	-	-	-	-	Idling
15:05:50.19	USH	-	-	-	-	Dark measurement started.
15:05:50.19	LSH	-	-	-	-	Dark measurement started.
15:05:50.20	SWS	-	-	-	-	Dark measurement started.
15:05:51.22	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:05:51.63	USH	-	-	-	-	Idling
15:05:52.04	SWS	-	-	-	-	Idling
15:05:56.86	LSH	-	-	-	-	Idling
15:06:21.59	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
15:06:23.69	SWS	-	-	-	-	Dark measurement started.
15:06:25.37	SWS	-	-	-	-	Idling
15:06:26.19	SWS	-	-	-	-	Dark measurement started.
15:06:26.19	LSH	-	-	-	-	Dark measurement started.
15:06:26.20	USH	-	-	-	-	Dark measurement started.
15:06:27.22	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:06:27.63	SWS	-	-	-	-	Idling
15:06:28.04	USH	-	-	-	-	Idling
15:06:31.71	USH	-	-	-	-	Dark measurement started.
15:06:31.71	SWS	-	-	-	-	Dark measurement started.

15:06:32.85	LSH	-	-	-	-	Idling
15:06:33.15	USH	-	-	-	-	Idling
15:06:33.38	SWS	-	-	-	-	Idling
15:07:27.03	SWS	-	-	-	-	Manual scene recording started.
15:07:27.04	LSH	-	-	-	-	Manual scene recording started.
15:07:27.05	USH	-	-	-	-	Manual scene recording started.
15:09:00.03	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:09:00.86	SWS	-	-	-	-	Idling
15:09:01.87	SWS	-	-	-	-	Dark measurement started.
15:09:03.33	SWS	-	-	-	-	Idling
15:09:03.56	SWS	180.0	-	-	-	Telescope sent to 0.000
15:09:05.27	SWS	1.5	-	-	-	Telescope stopped.
15:09:05.94	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
15:09:07.12	SWS	-	-	-	-	Dark measurement started.
15:09:08.84	SWS	-	-	-	-	Idling
15:09:09.00	SWS	0.0	-	-	-	Telescope sent to 0.000
15:09:10.55	SWS	-	-	-	-	Manual scene recording started.
15:10:43.71	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:10:44.54	SWS	-	-	-	-	Idling
15:10:48.65	SWS	0.0	-	-	-	Telescope sent to 180.000
15:10:50.05	SWS	-	-	-	-	Dark measurement started.
15:10:50.35	SWS	179.1	-	-	-	Telescope stopped.
15:10:51.51	SWS	-	-	-	-	Idling
15:10:53.84	SWS	-	-	35	-	VIS int.time changed from 100ms to 35ms.
15:10:54.81	SWS	-	-	-	-	Dark measurement started.
15:10:56.52	SWS	-	-	-	-	Idling
15:10:56.86	SWS	180.0	-	-	-	Telescope sent to 180.000
15:10:57.55	SWS	-	-	-	-	Manual scene recording started.
15:11:01.45	USH	-	-	-	-	Manual scene sampling started - Not Recording!
15:11:02.28	USH	-	-	-	-	Idling
15:11:03.35	USH	-	-	-	-	Dark measurement started.
15:11:04.79	USH	-	-	-	-	Idling
15:11:05.54	USH	-	-	-	-	Manual scene recording started.
15:11:08.00	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:11:09.33	LSH	-	-	-	-	Idling
15:11:09.71	LSH	-	-	-	-	Dark measurement started.
15:11:10.54	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:11:16.17	LSH	-	-	-	-	Idling
15:11:19.61	LSH	-	-	-	-	Manual scene recording started.
15:12:07.42	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:12:12.53	SWS	-	-	30	-	VIS int.time changed from 35ms to 30ms.
15:12:14.71	SWS	-	-	-	-	Dark measurement started.
15:12:16.15	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:12:17.59	SWS	-	-	-	-	Idling
15:12:18.78	SWS	-	-	-	-	Manual scene recording started.
15:12:54.02	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:12:54.86	SWS	-	-	-	-	Idling
15:12:56.65	SWS	180.0	-	-	-	Telescope sent to 0.000
15:12:57.50	SWS	-	-	-	-	Dark measurement started.
15:12:58.32	SWS	3.7	-	-	-	Telescope stopped.
15:12:58.95	SWS	-	-	-	-	Idling
15:13:01.09	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
15:13:02.48	SWS	-	-	-	-	Dark measurement started.
15:13:04.20	SWS	-	-	-	-	Idling
15:13:04.33	SWS	0.0	-	-	-	Telescope sent to 0.000
15:13:05.66	SWS	-	-	-	-	Manual scene recording started.
15:14:44.18	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:14:45.04	SWS	-	-	-	-	Idling
15:14:47.22	SWS	0.0	-	-	-	Telescope sent to 180.000
15:14:48.42	SWS	-	-	-	-	Dark measurement started.
15:14:48.92	SWS	178.7	-	-	-	Telescope stopped.
15:14:49.89	SWS	-	-	-	-	Idling
15:14:51.54	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
15:14:53.01	SWS	-	-	-	-	Dark measurement started.
15:14:54.71	SWS	-	-	-	-	Idling
15:14:55.37	SWS	180.0	-	-	-	Telescope sent to 180.000
15:14:56.05	SWS	-	-	-	-	Manual scene recording started.
15:14:59.85	USH	-	-	-	-	Manual scene sampling started - Not Recording!
15:15:00.68	USH	-	-	-	-	Idling



15:15:02.31	USH	-	-	-	-	Dark measurement started.
15:15:03.76	USH	-	-	-	-	Idling
15:15:04.26	USH	-	-	-	-	Manual scene recording started.
15:15:06.57	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:15:07.91	LSH	-	-	-	-	Idling
15:15:10.52	LSH	-	-	-	-	Dark measurement started.
15:15:11.35	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:15:16.98	LSH	-	-	-	-	Idling
15:15:17.46	LSH	-	-	-	-	Manual scene recording started.
15:16:28.92	USH	-	-	-	-	Idling
15:16:28.94	SWS	-	-	-	-	Idling
15:16:29.44	LSH	-	-	-	-	Idling
15:16:32.12	---	-	-	-	-	Reset shutters.
15:16:36.13	---	-	-	-	-	Reset shutters.
15:16:42.53	SWS	-	-	-	-	Dark measurement started.
15:16:42.53	LSH	-	-	-	-	Dark measurement started.
15:16:42.56	USH	-	-	-	-	Dark measurement started.
15:16:43.56	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:16:43.98	SWS	-	-	-	-	Idling
15:16:44.40	USH	-	-	-	-	Idling
15:16:47.70	USH	-	-	-	-	Dark measurement started.
15:16:47.71	SWS	-	-	-	-	Dark measurement started.
15:16:49.15	SWS	-	-	-	-	Idling
15:16:49.20	LSH	-	-	-	-	Idling
15:16:49.35	USH	-	-	-	-	Idling
15:16:49.79	SWS	-	-	-	-	Dark measurement started.
15:16:49.79	LSH	-	-	-	-	Dark measurement started.
15:16:49.82	USH	-	-	-	-	Dark measurement started.
15:16:51.26	SWS	-	-	-	-	Idling
15:16:51.67	USH	-	-	-	-	Idling
15:16:52.04	SWS	-	-	-	-	Dark measurement started.
15:16:52.05	USH	-	-	-	-	Dark measurement started.
15:16:53.48	SWS	-	-	-	-	Idling
15:16:53.68	USH	-	-	-	-	Idling
15:16:56.46	LSH	-	-	-	-	Idling
15:16:57.13	SWS	-	-	-	-	Dark measurement started.
15:16:57.13	LSH	-	-	-	-	Dark measurement started.
15:16:57.14	USH	-	-	-	-	Dark measurement started.
15:16:58.58	SWS	-	-	-	-	Idling
15:16:59.01	USH	-	-	-	-	Idling
15:17:03.78	LSH	-	-	-	-	Idling
15:17:08.54	SWS	180.0	-	-	-	Telescope sent to 0.000
15:17:10.25	SWS	1.5	-	-	-	Telescope stopped.
15:17:14.19	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
15:17:15.72	SWS	-	-	-	-	Dark measurement started.
15:17:17.40	SWS	-	-	-	-	Idling
15:17:17.94	SWS	-	-	-	-	Dark measurement started.
15:17:19.40	SWS	-	-	-	-	Idling
15:17:23.94	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:17:23.94	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:17:23.95	USH	-	-	-	-	Manual scene sampling started - Not Recording!
15:18:08.57	---	-	-	-	-	*** Freezer temp 10 deg C
15:19:56.67	USH	-	-	-	-	Idling
15:19:56.72	SWS	-	-	-	-	Idling
15:19:56.97	LSH	-	-	-	-	Idling
15:19:58.04	---	-	-	-	-	Reset shutters.
15:20:01.85	SWS	-	-	-	-	Dark measurement started.
15:20:01.86	LSH	-	-	-	-	Dark measurement started.
15:20:01.87	USH	-	-	-	-	Dark measurement started.
15:20:02.88	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:20:03.30	SWS	-	-	-	-	Idling
15:20:03.70	USH	-	-	-	-	Idling
15:20:08.51	LSH	-	-	-	-	Idling
15:20:08.62	SWS	-	-	-	-	Dark measurement started.
15:20:08.63	LSH	-	-	-	-	Dark measurement started.
15:20:08.64	USH	-	-	-	-	Dark measurement started.
15:20:10.08	SWS	-	-	-	-	Idling
15:20:10.49	USH	-	-	-	-	Idling
15:20:10.76	SWS	-	-	-	-	Dark measurement started.

15:20:10.77	USH	-	-	-	-	Dark measurement started.
15:20:12.21	SWS	-	-	-	-	Idling
15:20:12.40	USH	-	-	-	-	Idling
15:20:15.29	LSH	-	-	-	-	Idling
15:20:15.72	USH	-	-	-	-	Manual scene sampling started - Not Recording!
15:20:15.72	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:20:15.73	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:21:40.54	USH	-	-	-	-	Dark measurement started.
15:21:40.95	SWS	-	-	-	-	Dark measurement started.
15:21:41.40	LSH	-	-	-	-	Dark measurement started.
15:21:41.97	USH	-	-	-	-	Manual scene sampling started - Not Recording!
15:21:42.23	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:21:42.39	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:21:47.86	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:22:03.96	USH	-	-	-	-	Idling
15:22:04.37	SWS	-	-	-	-	Idling
15:22:04.90	LSH	-	-	-	-	Idling
15:22:05.24	USH	-	-	-	-	Dark measurement started.
15:22:05.24	SWS	-	-	-	-	Dark measurement started.
15:22:05.27	LSH	-	-	-	-	Dark measurement started.
15:22:06.46	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:22:06.69	USH	-	-	-	-	Idling
15:22:06.92	SWS	-	-	-	-	Idling
15:22:07.56	SWS	-	-	-	-	Dark measurement started.
15:22:07.56	USH	-	-	-	-	Dark measurement started.
15:22:09.00	SWS	-	-	-	-	Idling
15:22:09.20	USH	-	-	-	-	Idling
15:22:12.10	LSH	-	-	-	-	Idling
15:23:08.85	SWS	-	-	-	-	Manual scene recording started.
15:23:08.86	LSH	-	-	-	-	Manual scene recording started.
15:23:08.88	USH	-	-	-	-	Manual scene recording started.
15:23:35.83	SWS	-	-	-	-	Idling
15:23:35.92	USH	-	-	-	-	Idling
15:23:35.94	USH	-	-	-	-	Idling
15:23:36.05	LSH	-	-	-	-	Idling
15:23:38.07	SWS	-	-	-	-	Manual scene recording started.
15:23:38.07	LSH	-	-	-	-	Manual scene recording started.
15:23:38.09	USH	-	-	-	-	Manual scene recording started.
15:23:47.47	USH	-	-	-	-	Idling
15:23:47.47	SWS	-	-	-	-	Idling
15:23:47.84	LSH	-	-	-	-	Idling
15:23:49.71	SWS	-0.0	-	-	-	Telescope sent to 180.000
15:23:51.42	SWS	178.6	-	-	-	Telescope stopped.
15:23:52.30	SWS	180.0	-	-	-	Telescope sent to 180.000
15:23:53.50	SWS	-	-	-	-	Dark measurement started.
15:23:54.95	SWS	-	-	-	-	Idling
15:23:57.16	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
15:23:58.71	LSH	-	-	-	-	Dark measurement started.
15:23:58.71	USH	-	-	-	-	Dark measurement started.
15:23:58.74	SWS	-	-	-	-	Dark measurement started.
15:23:59.54	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:24:00.55	USH	-	-	-	-	Idling
15:24:00.84	SWS	-	-	-	-	Idling
15:24:05.18	LSH	-	-	-	-	Idling
15:24:11.25	SWS	-	-	-	-	Dark measurement started.
15:24:11.26	LSH	-	-	-	-	Dark measurement started.
15:24:11.29	USH	-	-	-	-	Dark measurement started.
15:24:12.28	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:24:12.70	SWS	-	-	-	-	Idling
15:24:13.11	USH	-	-	-	-	Idling
15:24:17.92	LSH	-	-	-	-	Idling
15:24:28.79	USH	-	-	-	-	Manual scene recording started.
15:24:30.06	LSH	-	-	-	-	Manual scene recording started.
15:24:38.82	SWS	-	-	-	-	Manual scene recording started.
15:26:03.05	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:26:03.88	SWS	-	-	-	-	Idling
15:26:05.24	SWS	180.0	-	-	-	Telescope sent to 0.000
15:26:06.26	SWS	-	-	-	-	Dark measurement started.
15:26:06.98	SWS	0.2	-	-	-	Telescope stopped.

15:26:07.71	SWS	-	-	-	-	Idling
15:26:09.70	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
15:26:10.43	SWS	-	-	-	-	Dark measurement started.
15:26:12.13	SWS	-	-	-	-	Idling
15:26:12.37	SWS	0.0	-	-	-	Telescope sent to 0.000
15:26:13.53	SWS	-	-	-	-	Manual scene recording started.
15:27:34.87	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:27:35.70	SWS	-	-	-	-	Idling
15:27:37.36	SWS	-0.0	-	-	-	Telescope sent to 180.000
15:27:38.00	SWS	-	-	-	-	Dark measurement started.
15:27:39.08	SWS	179.0	-	-	-	Telescope stopped.
15:27:39.46	SWS	-	-	-	-	Idling
15:27:39.93	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
15:27:45.83	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
15:27:45.84	SWS	-	-	-	30	NIR int.time changed from 100ms to 30ms.
15:27:46.91	SWS	-	-	-	-	Dark measurement started.
15:27:48.12	SWS	-	-	-	-	Idling
15:27:49.60	SWS	180.0	-	-	-	Telescope sent to 180.000
15:27:51.59	SWS	-	-	-	-	Manual scene recording started.
15:27:55.61	USH	-	-	-	-	Manual scene sampling started - Not Recording!
15:27:56.44	USH	-	-	-	-	Idling
15:27:57.63	USH	-	-	-	-	Dark measurement started.
15:27:59.07	USH	-	-	-	-	Idling
15:27:59.42	USH	-	-	-	-	Manual scene recording started.
15:28:01.30	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:28:02.64	LSH	-	-	-	-	Idling
15:28:04.21	LSH	-	-	-	-	Dark measurement started.
15:28:05.04	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:28:10.68	LSH	-	-	-	-	Idling
15:28:11.05	LSH	-	-	-	-	Manual scene recording started.
15:29:13.09	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:29:13.85	SWS	-	-	-	-	Idling
15:29:15.68	SWS	180.0	-	-	-	Telescope sent to 0.000
15:29:16.47	SWS	-	-	-	-	Dark measurement started.
15:29:17.23	SWS	-	-	-	-	Idling
15:29:17.37	SWS	1.1	-	-	-	Telescope stopped.
15:29:20.40	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
15:29:20.41	SWS	-	-	-	100	NIR int.time changed from 30ms to 100ms.
15:29:21.43	SWS	-	-	-	-	Dark measurement started.
15:29:23.41	SWS	-	-	-	-	Idling
15:29:23.85	SWS	0.0	-	-	-	Telescope sent to 0.000
15:29:25.21	SWS	-	-	-	-	Manual scene recording started.
15:30:46.04	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:30:46.87	SWS	-	-	-	-	Idling
15:30:47.82	SWS	-	-	-	-	Dark measurement started.
15:30:49.31	SWS	-	-	-	-	Idling
15:30:49.62	SWS	0.0	-	-	-	Telescope sent to 180.000
15:30:51.33	SWS	178.5	-	-	-	Telescope stopped.
15:30:52.51	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
15:30:52.52	SWS	-	-	-	30	NIR int.time changed from 100ms to 30ms.
15:30:54.08	SWS	-	-	-	-	Dark measurement started.
15:30:55.34	SWS	-	-	-	-	Idling
15:30:56.26	SWS	180.0	-	-	-	Telescope sent to 180.000
15:30:57.24	SWS	-	-	-	-	Manual scene recording started.
15:31:03.77	USH	-	-	-	-	Manual scene sampling started - Not Recording!
15:31:04.59	USH	-	-	-	-	Idling
15:31:05.93	USH	-	-	-	-	Dark measurement started.
15:31:07.37	USH	-	-	-	-	Idling
15:31:07.98	USH	-	-	-	-	Manual scene recording started.
15:31:10.99	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:31:13.45	LSH	-	-	-	-	Dark measurement started.
15:31:14.27	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:31:19.90	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:31:21.22	LSH	-	-	-	-	Manual scene recording started.
15:32:19.00	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:32:19.77	SWS	-	-	-	-	Idling
15:32:21.49	SWS	180.0	-	-	-	Telescope sent to 0.000
15:32:21.99	SWS	-	-	-	-	Dark measurement started.
15:32:22.73	SWS	-	-	-	-	Idling

15:32:23.19	SWS	0.4	-	-	-	Telescope stopped.
15:32:24.96	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
15:32:24.97	SWS	-	-	-	100	NIR int.time changed from 30ms to 100ms.
15:32:25.88	SWS	-	-	-	-	Dark measurement started.
15:32:27.82	SWS	-	-	-	-	Idling
15:32:28.60	SWS	-0.0	-	-	-	Telescope sent to 0.000
15:32:29.59	SWS	-	-	-	-	Manual scene recording started.
15:33:51.00	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:33:51.85	SWS	-	-	-	-	Idling
15:33:53.25	SWS	0.0	-	-	-	Telescope sent to 180.000
15:33:54.08	SWS	-	-	-	-	Dark measurement started.
15:33:54.97	SWS	179.0	-	-	-	Telescope stopped.
15:33:55.52	SWS	-	-	-	-	Idling
15:33:57.34	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
15:33:57.35	SWS	-	-	-	30	NIR int.time changed from 100ms to 30ms.
15:33:58.66	SWS	-	-	-	-	Dark measurement started.
15:33:59.88	SWS	-	-	-	-	Idling
15:34:00.91	SWS	180.0	-	-	-	Telescope sent to 180.000
15:34:01.94	SWS	-	-	-	-	Manual scene recording started.
15:34:47.99	SWS	-	-	-	-	Idling
15:34:48.05	USH	-	-	-	-	Idling
15:34:48.08	LSH	-	-	-	-	Idling
15:34:49.64	---	-	-	-	-	Reset shutters.
15:34:55.41	---	-	-	-	-	Reset shutters.
15:34:59.00	SWS	-	-	-	-	Dark measurement started.
15:34:59.00	LSH	-	-	-	-	Dark measurement started.
15:34:59.00	USH	-	-	-	-	Dark measurement started.
15:35:00.23	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:35:00.35	SWS	-	-	-	-	Idling
15:35:01.02	USH	-	-	-	-	Idling
15:35:02.97	SWS	-	-	-	-	Dark measurement started.
15:35:02.98	USH	-	-	-	-	Dark measurement started.
15:35:03.72	SWS	-	-	-	-	Idling
15:35:04.62	USH	-	-	-	-	Idling
15:35:05.86	LSH	-	-	-	-	Idling
15:35:10.12	USH	-	-	-	-	Manual scene recording started.
15:35:12.29	LSH	-	-	-	-	Manual scene recording started.
15:35:17.05	SWS	-	-	-	-	Manual scene recording started.
15:36:28.92	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:36:29.68	SWS	-	-	-	-	Idling
15:36:31.55	SWS	-	-	-	-	Dark measurement started.
15:36:32.29	SWS	-	-	-	-	Idling
15:41:02.96	USH	-	-	-	-	Idling
15:41:03.18	LSH	-	-	-	-	Idling
15:41:06.06	USH	-	-	-	-	Dark measurement started.
15:41:06.07	LSH	-	-	-	-	Dark measurement started.
15:41:06.08	SWS	-	-	-	-	Dark measurement started.
15:41:07.10	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:41:07.50	USH	-	-	-	-	Idling
15:41:07.81	SWS	-	-	-	-	Idling
15:41:09.03	SWS	-	-	-	-	Manual scene recording started.
15:41:09.04	USH	-	-	-	-	Manual scene recording started.
15:41:12.73	LSH	-	-	-	-	Idling
15:41:40.07	USH	-	-	-	-	Idling
15:41:40.08	SWS	-	-	-	-	Idling
15:41:42.23	SWS	180.0	-	-	-	Telescope sent to 0.000
15:41:42.70	SWS	-	-	-	-	Dark measurement started.
15:41:43.44	SWS	-	-	-	-	Idling
15:41:43.96	SWS	1.2	-	-	-	Telescope stopped.
15:41:47.10	SWS	-	-	200	-	VIS int.time changed from 30ms to 200ms.
15:41:47.11	SWS	-	-	-	200	NIR int.time changed from 30ms to 200ms.
15:41:48.97	SWS	-	-	-	-	Dark measurement started.
15:41:51.04	SWS	-0.0	-	-	-	Telescope sent to 0.000
15:41:51.89	SWS	-	-	-	-	Idling
15:42:00.65	USH	-	-	200	-	VIS int.time changed from 100ms to 200ms.
15:42:00.65	USH	-	-	-	200	NIR int.time changed from 100ms to 200ms.
15:42:01.34	USH	-	-	-	-	Dark measurement started.
15:42:04.25	USH	-	-	-	-	Idling
15:42:06.63	USH	-	-	-	-	Dark measurement started.

15:42:09.08	USH	-	-	-	-	Idling
15:42:11.54	USH	-	-	-	-	Manual scene sampling started - Not Recording!
15:42:11.56	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:42:11.57	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:42:49.31	USH	-	-	-	-	Dark measurement started.
15:42:49.71	SWS	-	-	-	-	Dark measurement started.
15:42:50.11	LSH	-	-	-	-	Dark measurement started.
15:42:50.94	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:42:51.76	USH	-	-	-	-	Manual scene sampling started - Not Recording!
15:42:52.15	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:42:55.25	SWS	-	-	-	-	Idling
15:42:55.58	USH	-	-	-	-	Idling
15:42:56.18	SWS	-	-	-	-	Dark measurement started.
15:42:56.18	USH	-	-	-	-	Dark measurement started.
15:42:56.58	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:42:57.92	LSH	-	-	-	-	Dark measurement started.
15:42:58.64	SWS	-	-	-	-	Idling
15:42:58.76	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:42:58.88	USH	-	-	-	-	Idling
15:43:04.39	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:43:06.84	LSH	-	-	-	-	Idling
15:43:07.58	USH	-	-	-	-	Dark measurement started.
15:43:07.58	LSH	-	-	-	-	Dark measurement started.
15:43:07.59	SWS	-	-	-	-	Dark measurement started.
15:43:08.62	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:43:10.03	USH	-	-	-	-	Idling
15:43:10.42	SWS	-	-	-	-	Idling
15:43:14.25	LSH	-	-	-	-	Idling
15:44:40.35	USH	-	-	-	-	Dark measurement started.
15:44:40.36	LSH	-	-	-	-	Dark measurement started.
15:44:40.37	SWS	-	-	-	-	Dark measurement started.
15:44:41.39	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:44:42.80	USH	-	-	-	-	Idling
15:44:43.20	SWS	-	-	-	-	Idling
15:44:43.53	USH	-	-	-	-	Dark measurement started.
15:44:43.54	SWS	-	-	-	-	Dark measurement started.
15:44:46.00	USH	-	-	-	-	Idling
15:44:46.20	SWS	-	-	-	-	Idling
15:44:47.03	LSH	-	-	-	-	Idling
15:44:47.50	USH	-	-	-	-	Dark measurement started.
15:44:47.52	LSH	-	-	-	-	Dark measurement started.
15:44:47.52	SWS	-	-	-	-	Dark measurement started.
15:44:49.97	USH	-	-	-	-	Idling
15:44:50.36	SWS	-	-	-	-	Idling
15:44:50.79	SWS	-	-	-	-	Dark measurement started.
15:44:50.80	USH	-	-	-	-	Dark measurement started.
15:44:53.25	SWS	-	-	-	-	Idling
15:44:53.45	USH	-	-	-	-	Idling
15:44:54.18	LSH	-	-	-	-	Idling
15:47:00.66	USH	-	-	-	-	Dark measurement started.
15:47:00.66	SWS	-	-	-	-	Dark measurement started.
15:47:00.67	LSH	-	-	-	-	Dark measurement started.
15:47:02.21	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:47:03.60	USH	-	-	-	-	Idling
15:47:03.80	SWS	-	-	-	-	Idling
15:47:04.14	USH	-	-	-	-	Dark measurement started.
15:47:04.15	SWS	-	-	-	-	Dark measurement started.
15:47:06.61	USH	-	-	-	-	Idling
15:47:06.80	SWS	-	-	-	-	Idling
15:47:07.24	SWS	-	-	-	-	Dark measurement started.
15:47:07.27	USH	-	-	-	-	Dark measurement started.
15:47:07.85	LSH	-	-	-	-	Idling
15:47:08.67	LSH	-	-	-	-	Dark measurement started.
15:47:09.70	SWS	-	-	-	-	Idling
15:47:09.89	USH	-	-	-	-	Idling
15:47:10.57	USH	-	-	-	-	Dark measurement started.
15:47:10.57	SWS	-	-	-	-	Dark measurement started.
15:47:13.04	USH	-	-	-	-	Idling
15:47:13.23	SWS	-	-	-	-	Idling

15:47:15.77	LSH	-	-	-	-	Idling
15:48:38.81	SWS	-	-	-	-	Manual scene recording started.
15:48:38.82	LSH	-	-	-	-	Manual scene recording started.
15:48:38.83	USH	-	-	-	-	Manual scene recording started.
15:50:00.97	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:50:01.90	SWS	-	-	-	-	Idling
15:50:03.17	SWS	-	-	-	-	Dark measurement started.
15:50:05.05	SWS	-0.0	-	-	-	Telescope sent to 180.000
15:50:05.64	SWS	-	-	-	-	Idling
15:50:06.79	SWS	179.3	-	-	-	Telescope stopped.
15:50:09.02	SWS	-	-	100	-	VIS int.time changed from 200ms to 100ms.
15:50:09.03	SWS	-	-	-	100	NIR int.time changed from 200ms to 100ms.
15:50:10.53	SWS	-	-	-	-	Dark measurement started.
15:50:12.47	SWS	-	-	-	-	Idling
15:50:12.77	SWS	180.0	-	-	-	Telescope sent to 180.000
15:50:13.53	SWS	-	-	-	-	Manual scene recording started.
15:50:34.93	---	-	-	-	-	*** Freezer temp 10 deg C
15:51:35.18	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:51:36.02	SWS	-	-	-	-	Idling
15:51:36.85	SWS	-	-	-	-	Dark measurement started.
15:51:38.30	SWS	-	-	-	-	Idling
15:51:38.75	SWS	180.0	-	-	-	Telescope sent to 0.000
15:51:40.46	SWS	1.4	-	-	-	Telescope stopped.
15:51:40.93	SWS	-	-	200	-	VIS int.time changed from 100ms to 200ms.
15:51:40.96	SWS	-	-	-	200	NIR int.time changed from 100ms to 200ms.
15:51:41.77	SWS	-	-	-	-	Dark measurement started.
15:51:43.62	SWS	-0.0	-	-	-	Telescope sent to 0.000
15:51:44.70	SWS	-	-	-	-	Idling
15:51:45.54	SWS	-	-	-	-	Manual scene recording started.
15:51:52.50	USH	-	-	-	-	Manual scene sampling started - Not Recording!
15:51:54.88	USH	-	-	-	-	Dark measurement started.
15:51:57.33	USH	-	-	-	-	Manual scene sampling started - Not Recording!
15:51:58.25	USH	-	-	-	-	Manual scene recording started.
15:51:59.33	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:52:00.66	LSH	-	-	-	-	Idling
15:52:01.49	LSH	-	-	-	-	Dark measurement started.
15:52:02.32	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:52:07.96	LSH	-	-	-	-	Idling
15:52:08.58	LSH	-	-	-	-	Manual scene recording started.
15:53:07.52	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:53:08.48	SWS	-	-	-	-	Idling
15:53:09.25	SWS	-	-	-	-	Dark measurement started.
15:53:10.90	SWS	-0.0	-	-	-	Telescope sent to 180.000
15:53:11.70	SWS	-	-	-	-	Idling
15:53:12.59	SWS	177.8	-	-	-	Telescope stopped.
15:53:13.47	SWS	-	-	100	-	VIS int.time changed from 200ms to 100ms.
15:53:13.48	SWS	-	-	-	100	NIR int.time changed from 200ms to 100ms.
15:53:14.51	SWS	-	-	-	-	Dark measurement started.
15:53:16.37	SWS	180.0	-	-	-	Telescope sent to 180.000
15:53:16.47	SWS	-	-	-	-	Idling
15:53:17.25	SWS	-	-	-	-	Manual scene recording started.
15:54:39.09	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:54:39.92	SWS	-	-	-	-	Idling
15:54:40.59	SWS	-	-	-	-	Dark measurement started.
15:54:42.04	SWS	-	-	-	-	Idling
15:54:42.46	SWS	180.0	-	-	-	Telescope sent to 0.000
15:54:44.17	SWS	0.9	-	-	-	Telescope stopped.
15:54:45.93	SWS	-	-	200	-	VIS int.time changed from 100ms to 200ms.
15:54:45.94	SWS	-	-	-	200	NIR int.time changed from 100ms to 200ms.
15:54:46.97	SWS	-	-	-	-	Dark measurement started.
15:54:49.02	SWS	0.0	-	-	-	Telescope sent to 0.000
15:54:49.90	SWS	-	-	-	-	Idling
15:54:50.28	SWS	-	-	-	-	Manual scene recording started.
15:54:53.26	USH	-	-	-	-	Manual scene sampling started - Not Recording!
15:54:54.19	USH	-	-	-	-	Idling
15:54:54.64	USH	-	-	-	-	Dark measurement started.
15:54:57.08	USH	-	-	-	-	Idling
15:54:57.41	USH	-	-	-	-	Manual scene recording started.
15:54:58.89	LSH	-	-	-	-	Manual scene sampling started - Not Recording!

15:55:00.23	LSH	-	-	-	-	Idling
15:55:01.48	LSH	-	-	-	-	Dark measurement started.
15:55:02.30	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:55:07.94	LSH	-	-	-	-	Idling
15:55:08.39	LSH	-	-	-	-	Manual scene recording started.
15:56:12.13	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:56:13.05	SWS	-	-	-	-	Idling
15:56:13.60	SWS	-	-	-	-	Dark measurement started.
15:56:15.52	SWS	0.0	-	-	-	Telescope sent to 180.000
15:56:16.05	SWS	-	-	-	-	Idling
15:56:17.25	SWS	179.6	-	-	-	Telescope stopped.
15:56:17.73	SWS	-	-	100	-	VIS int.time changed from 200ms to 100ms.
15:56:17.75	SWS	-	-	-	100	NIR int.time changed from 200ms to 100ms.
15:56:18.57	SWS	-	-	-	-	Dark measurement started.
15:56:20.43	SWS	180.0	-	-	-	Telescope sent to 180.000
15:56:20.51	SWS	-	-	-	-	Idling
15:56:21.02	SWS	-	-	-	-	Manual scene recording started.
15:57:40.83	SWS	-	-	-	-	Idling
15:57:40.90	USH	-	-	-	-	Idling
15:57:40.98	LSH	-	-	-	-	Idling
15:57:43.30	---	-	-	-	-	Reset shutters.
15:57:47.69	---	-	-	-	-	Reset shutters.
15:57:50.92	USH	-	-	-	-	Dark measurement started.
15:57:50.93	LSH	-	-	-	-	Dark measurement started.
15:57:50.93	SWS	-	-	-	-	Dark measurement started.
15:57:51.96	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:57:52.78	SWS	-	-	-	-	Idling
15:57:53.37	USH	-	-	-	-	Idling
15:57:53.69	SWS	-	-	-	-	Dark measurement started.
15:57:53.69	USH	-	-	-	-	Dark measurement started.
15:57:55.15	SWS	-	-	-	-	Idling
15:57:56.35	USH	-	-	-	-	Idling
15:57:57.59	LSH	-	-	-	-	Idling
15:57:57.99	SWS	-	-	-	-	Dark measurement started.
15:57:58.00	LSH	-	-	-	-	Dark measurement started.
15:57:58.03	USH	-	-	-	-	Dark measurement started.
15:57:59.44	SWS	-	-	-	-	Idling
15:58:00.86	USH	-	-	-	-	Idling
15:58:01.20	USH	-	-	-	-	Dark measurement started.
15:58:01.22	SWS	-	-	-	-	Dark measurement started.
15:58:02.86	SWS	-	-	-	-	Idling
15:58:03.64	USH	-	-	-	-	Idling
15:58:04.65	LSH	-	-	-	-	Idling
15:58:10.39	SWS	180.0	-	-	-	Telescope sent to 0.000
15:58:12.10	SWS	0.9	-	-	-	Telescope stopped.
15:58:18.70	SWS	-	-	200	-	VIS int.time changed from 100ms to 200ms.
15:58:18.71	SWS	-	-	-	200	NIR int.time changed from 100ms to 200ms.
15:58:24.42	SWS	-	-	300	-	VIS int.time changed from 200ms to 300ms.
15:58:24.43	SWS	-	-	-	300	NIR int.time changed from 200ms to 300ms.
15:58:26.29	SWS	-	-	-	-	Dark measurement started.
15:58:30.21	SWS	-	-	-	-	Idling
15:58:35.21	SWS	-	-	-	-	Manual scene recording started.
15:58:35.22	LSH	-	-	-	-	Manual scene recording started.
15:58:35.23	USH	-	-	-	-	Manual scene recording started.
15:58:50.80	USH	-	-	-	-	Idling
15:58:50.94	SWS	-	-	-	-	Idling
15:58:51.21	LSH	-	-	-	-	Idling
15:59:08.88	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
15:59:08.88	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:59:08.91	USH	-	-	-	-	Manual scene sampling started - Not Recording!
15:59:18.96	SWS	-	-	-	-	Idling
15:59:19.40	LSH	-	-	-	-	Idling
15:59:19.61	USH	-	-	-	-	Idling
15:59:20.30	LSH	-	-	-	-	Dark measurement started.
15:59:20.31	USH	-	-	-	-	Dark measurement started.
15:59:20.35	SWS	-	-	-	-	Dark measurement started.
15:59:21.14	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
15:59:22.96	USH	-	-	-	-	Idling
15:59:23.82	USH	-	-	-	-	Manual scene sampling started - Not Recording!

15:59:24.17	SWS	-	-	-	-	Idling
15:59:26.77	LSH	-	-	-	-	Idling
15:59:38.05	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
15:59:38.05	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:02:29.71	USH	-	-	-	-	Idling
16:02:30.09	SWS	-	-	-	-	Idling
16:02:30.18	LSH	-	-	-	-	Idling
16:02:30.68	---	-	-	-	-	Reset shutters.
16:02:33.91	USH	-	-	-	-	Dark measurement started.
16:02:33.92	LSH	-	-	-	-	Dark measurement started.
16:02:33.94	SWS	-	-	-	-	Dark measurement started.
16:02:34.96	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
16:02:36.39	USH	-	-	-	-	Idling
16:02:37.78	SWS	-	-	-	-	Idling
16:02:38.78	SWS	-	-	-	-	Manual scene recording started.
16:02:38.78	USH	-	-	-	-	Manual scene recording started.
16:02:40.58	LSH	-	-	-	-	Idling
16:02:41.00	LSH	-	-	-	-	Manual scene recording started.
16:03:43.22	USH	-	1000	-	-	Sample period changed from 100ms to 1000ms.
16:03:45.91	SWS	-	1000	-	-	Sample period changed from 100ms to 1000ms.
16:03:53.31	LSH	-	1000	-	-	Sample period changed from 100ms to 1000ms.
16:05:53.68	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:05:54.71	SWS	-	-	-	-	Idling
16:05:56.90	SWS	-	-	-	-	Dark measurement started.
16:06:00.34	SWS	-	-	-	-	Idling
16:06:05.03	SWS	0.0	-	-	-	Telescope at scan limit - going to 45.0
16:06:05.47	SWS	2.0	-	-	-	Telescope sent to -45.000
16:06:06.24	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:06:09.46	SWS	40.2	-	-	-	Telescope at scan limit - going to -45.0
16:06:10.14	SWS	32.1	-	-	-	Telescope at scan limit - going to -45.0
16:06:10.88	SWS	23.5	-	-	-	Telescope at scan limit - going to -45.0
16:06:11.61	SWS	14.8	-	-	-	Telescope at scan limit - going to -45.0
16:06:12.34	SWS	5.9	-	-	-	Telescope at scan limit - going to -45.0
16:06:13.07	SWS	-2.8	-	-	-	Telescope at scan limit - going to 45.0
16:06:13.80	SWS	-11.6	-	-	-	Telescope at scan limit - going to 45.0
16:06:14.52	SWS	-20.4	-	-	-	Telescope at scan limit - going to 45.0
16:06:15.25	SWS	-29.1	-	-	-	Telescope at scan limit - going to 45.0
16:06:15.98	SWS	-37.9	-	-	-	Telescope at scan limit - going to 45.0
16:06:16.71	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
16:06:21.27	SWS	-	-	-	-	Manual scene recording started.
16:06:24.77	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
16:06:28.93	SWS	-	100	-	-	Sample period changed from 1000ms to 100ms.
16:06:32.82	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
16:06:40.88	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
16:06:48.95	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
16:06:51.58	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:06:52.63	SWS	-	-	-	-	Idling
16:06:54.78	SWS	-	-	100	-	VIS int.time changed from 300ms to 100ms.
16:06:54.78	SWS	-	-	-	100	NIR int.time changed from 300ms to 100ms.
16:06:55.90	SWS	-	-	-	-	Dark measurement started.
16:06:57.03	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
16:06:57.81	SWS	-	-	-	-	Idling
16:06:58.50	SWS	-	-	-	-	Manual scene recording started.
16:07:05.12	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
16:07:13.24	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
16:07:21.33	SWS	-45.0	-	-	-	Telescope at scan limit - going to 45.0
16:07:29.43	SWS	45.0	-	-	-	Telescope at scan limit - going to -45.0
16:07:30.24	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:07:31.07	SWS	-	-	-	-	Idling
16:07:33.79	SWS	-3.1	-	-	-	Telescope stopped.
16:07:42.03	SWS	-3.0	-	-	-	Telescope sent to 0.000
16:07:44.87	SWS	-	-	-	-	Dark measurement started.
16:07:46.32	SWS	-	-	-	-	Idling
16:07:48.51	SWS	-	1000	-	-	Sample period changed from 100ms to 1000ms.
16:07:50.68	SWS	-	-	300	-	VIS int.time changed from 100ms to 300ms.
16:07:50.69	SWS	-	-	-	300	NIR int.time changed from 100ms to 300ms.
16:07:51.47	SWS	-	-	-	-	Dark measurement started.
16:07:55.40	SWS	-	-	-	-	Idling
16:07:55.73	SWS	-	-	-	-	Manual scene recording started.



16:08:30.76	---	-	-	-	*** Freezer temp 10 deg C
16:12:27.05	LSH	-	-	-	Idling
16:12:27.08	SWS	-	-	-	Idling
16:12:27.80	USH	-	-	-	Idling
16:12:29.06	---	-	-	-	Reset shutters.
16:12:33.38	LSH	-	-	-	Dark measurement started.
16:12:33.38	USH	-	-	-	Dark measurement started.
16:12:33.40	SWS	-	-	-	Dark measurement started.
16:12:34.22	LSH	-	-	-	Warning: Abnormally bright dark measurement.
16:12:36.04	USH	-	-	-	Idling
16:12:36.49	USH	-	-	-	Dark measurement started.
16:12:37.24	SWS	-	-	-	Idling
16:12:37.90	SWS	-	-	-	Dark measurement started.
16:12:38.93	USH	-	-	-	Idling
16:12:39.86	LSH	-	-	-	Idling
16:12:41.14	LSH	-	-	-	Dark measurement started.
16:12:41.15	USH	-	-	-	Dark measurement started.
16:12:41.34	SWS	-	-	-	Idling
16:12:41.99	LSH	-	-	-	Warning: Abnormally bright dark measurement.
16:12:42.07	SWS	-	-	-	Dark measurement started.
16:12:43.80	USH	-	-	-	Idling
16:12:45.51	SWS	-	-	-	Idling
16:12:45.91	USH	-	-	-	Dark measurement started.
16:12:45.91	SWS	-	-	-	Dark measurement started.
16:12:47.64	LSH	-	-	-	Idling
16:12:48.36	USH	-	-	-	Idling
16:12:49.56	SWS	-	-	-	Idling
16:12:50.14	SWS	-	-	-	Manual scene recording started.
16:12:50.14	LSH	-	-	-	Manual scene recording started.
16:12:50.15	USH	-	-	-	Manual scene recording started.
16:20:09.25	SWS	-	-	-	Idling
16:20:09.35	USH	-	-	-	Idling
16:20:09.57	LSH	-	-	-	Idling
16:20:11.69	---	-	-	-	Reset shutters.
16:20:15.12	SWS	-	-	-	Dark measurement started.
16:20:15.12	LSH	-	-	-	Dark measurement started.
16:20:15.14	USH	-	-	-	Dark measurement started.
16:20:16.15	LSH	-	-	-	Warning: Abnormally bright dark measurement.
16:20:17.96	USH	-	-	-	Idling
16:20:18.57	SWS	-	-	-	Idling
16:20:18.88	USH	-	-	-	Dark measurement started.
16:20:18.90	SWS	-	-	-	Dark measurement started.
16:20:21.34	USH	-	-	-	Idling
16:20:21.79	LSH	-	-	-	Idling
16:20:22.54	SWS	-	-	-	Idling
16:20:22.93	USH	-	-	-	Dark measurement started.
16:20:22.94	LSH	-	-	-	Dark measurement started.
16:20:22.96	SWS	-	-	-	Dark measurement started.
16:20:25.38	USH	-	-	-	Idling
16:20:26.78	SWS	-	-	-	Idling
16:20:27.08	USH	-	-	-	Dark measurement started.
16:20:27.08	SWS	-	-	-	Dark measurement started.
16:20:29.54	USH	-	-	-	Idling
16:20:29.64	LSH	-	-	-	Idling
16:20:30.74	SWS	-	-	-	Idling
16:20:31.35	USH	-	-	-	Manual scene sampling started - Not Recording!
16:20:31.36	LSH	-	-	-	Manual scene sampling started - Not Recording!
16:20:31.37	SWS	-	-	-	Manual scene sampling started - Not Recording!
16:24:36.74	SWS	-	-	-	Dark measurement started.
16:24:37.05	USH	-	-	-	Dark measurement started.
16:24:37.27	LSH	-	-	-	Dark measurement started.
16:24:38.10	LSH	-	-	-	Warning: Abnormally bright dark measurement.
16:24:39.51	USH	-	-	-	Manual scene sampling started - Not Recording!
16:24:40.21	SWS	-	-	-	Manual scene sampling started - Not Recording!
16:24:41.24	SWS	-	-	-	Manual scene recording started.
16:24:41.88	USH	-	-	-	Manual scene recording started.
16:24:43.78	LSH	-	-	-	Manual scene sampling started - Not Recording!
16:25:28.21	LSH	-	-	-	Manual scene recording started.
16:25:52.39	SWS	-	-	-	Manual scene sampling started - Not Recording!

16:25:55.84	SWS	-	100	-	-	Sample period changed from 1000ms to 100ms.
16:25:59.37	SWS	-	-	100	-	VIS int.time changed from 300ms to 100ms.
16:25:59.38	SWS	-	-	-	100	NIR int.time changed from 300ms to 100ms.
16:26:01.10	SWS	-	-	-	-	Dark measurement started.
16:26:02.55	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:26:04.03	SWS	-	-	-	-	Manual scene recording started.
16:26:10.91	USH	-	-	-	-	Manual scene sampling started - Not Recording!
16:26:12.56	USH	-	-	-	-	Dark measurement started.
16:26:15.02	USH	-	-	-	-	Manual scene sampling started - Not Recording!
16:26:16.65	USH	-	-	100	-	VIS int.time changed from 200ms to 100ms.
16:26:16.66	USH	-	-	-	100	NIR int.time changed from 200ms to 100ms.
16:26:19.62	USH	-	100	-	-	Sample period changed from 1000ms to 100ms.
16:26:21.53	USH	-	-	-	-	Dark measurement started.
16:26:23.03	USH	-	-	-	-	Manual scene sampling started - Not Recording!
16:26:23.86	USH	-	-	-	-	Manual scene recording started.
16:26:28.65	LSH	-	100	-	-	Sample period changed from 1000ms to 100ms.
16:26:30.90	LSH	-	-	-	-	Dark measurement started.
16:26:31.73	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
16:26:37.40	LSH	-	-	-	-	Manual scene recording started.
16:26:38.22	LSH	-	-	-	-	Idling
16:27:33.44	LSH	-	-	-	-	Manual scene recording started.
16:27:36.58	SWS	-	-	-	-	Warning: Clipping may be occurring.
16:27:42.67	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:27:43.53	SWS	-	-	-	-	Idling
16:27:44.13	SWS	-	-	-	-	Dark measurement started.
16:27:45.57	SWS	-	-	-	-	Idling
16:27:48.07	SWS	-	-	50	-	VIS int.time changed from 100ms to 50ms.
16:27:48.08	SWS	-	-	-	50	NIR int.time changed from 100ms to 50ms.
16:27:49.35	SWS	-	-	-	50	NIR int.time changed from 50ms to 50ms.
16:27:51.11	SWS	-	-	-	100	NIR int.time changed from 50ms to 100ms.
16:27:52.28	SWS	-	-	-	-	Dark measurement started.
16:27:54.00	SWS	-	-	-	-	Idling
16:27:54.36	SWS	-	-	-	-	Manual scene recording started.
16:29:55.45	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:29:56.29	SWS	-	-	-	-	Idling
16:29:57.82	SWS	-0.0	-	-	-	Telescope sent to 180.000
16:29:58.50	SWS	-	-	-	-	Dark measurement started.
16:29:59.56	SWS	179.7	-	-	-	Telescope stopped.
16:29:59.96	SWS	-	-	-	-	Idling
16:30:01.58	SWS	-	-	100	-	VIS int.time changed from 50ms to 100ms.
16:30:02.51	SWS	-	-	-	-	Dark measurement started.
16:30:04.23	SWS	-	-	-	-	Idling
16:30:05.39	SWS	-	-	-	-	Manual scene recording started.
16:31:38.00	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:31:38.85	SWS	-	-	-	-	Idling
16:31:40.82	SWS	180.0	-	-	-	Telescope sent to 0.000
16:31:41.47	SWS	-	-	-	-	Dark measurement started.
16:31:42.56	SWS	0.3	-	-	-	Telescope stopped.
16:31:42.93	SWS	-	-	-	-	Idling
16:31:45.76	SWS	-	-	50	-	VIS int.time changed from 100ms to 50ms.
16:31:46.73	SWS	-	-	-	-	Dark measurement started.
16:31:48.45	SWS	-	-	-	-	Idling
16:31:48.79	SWS	0.0	-	-	-	Telescope sent to 0.000
16:31:49.69	SWS	-	-	-	-	Manual scene recording started.
16:32:10.04	USH	-	-	-	-	Manual scene sampling started - Not Recording!
16:32:10.88	USH	-	-	-	-	Idling
16:32:12.50	USH	-	-	-	-	Dark measurement started.
16:32:13.95	USH	-	-	-	-	Idling
16:32:14.36	USH	-	-	-	-	Manual scene recording started.
16:32:16.93	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
16:32:18.28	LSH	-	-	-	-	Idling
16:32:18.68	LSH	-	-	-	-	Dark measurement started.
16:32:19.51	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
16:32:25.14	LSH	-	-	-	-	Idling
16:32:25.48	LSH	-	-	-	-	Manual scene recording started.
16:33:11.56	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:33:12.41	SWS	-	-	-	-	Idling
16:33:13.36	SWS	-	-	-	-	Dark measurement started.
16:33:14.83	SWS	-	-	-	-	Idling

16:33:15.98	SWS	-0.0	-	-	-	Telescope sent to 180.000
16:33:17.72	SWS	179.8	-	-	-	Telescope stopped.
16:33:18.86	SWS	-	-	100	-	VIS int.time changed from 50ms to 100ms.
16:33:19.73	SWS	-	-	-	-	Dark measurement started.
16:33:21.44	SWS	-	-	-	-	Idling
16:33:21.60	SWS	180.0	-	-	-	Telescope sent to 180.000
16:33:22.24	SWS	-	-	-	-	Manual scene recording started.
16:36:05.32	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:36:08.94	SWS	180.0	-	-	-	Telescope sent to 0.000
16:36:10.67	SWS	0.5	-	-	-	Telescope stopped.
16:36:11.77	SWS	-	-	-	-	Dark measurement started.
16:36:13.21	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:36:17.78	SWS	-	-	-	-	Manual scene recording started.
16:36:22.01	USH	-	-	-	-	Manual scene sampling started - Not Recording!
16:36:22.85	USH	-	-	-	-	Idling
16:36:25.11	USH	-	-	-	-	Manual scene recording started.
16:36:26.67	USH	-	-	-	-	Dark measurement started.
16:36:28.12	USH	-	-	-	-	Manual scene recording started.
16:36:31.21	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
16:36:32.55	LSH	-	-	-	-	Idling
16:36:33.08	LSH	-	-	-	-	Dark measurement started.
16:36:33.92	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
16:36:39.56	LSH	-	-	-	-	Idling
16:36:39.91	LSH	-	-	-	-	Manual scene recording started.
16:36:50.45	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:36:51.29	SWS	-	-	-	-	Idling
16:36:52.42	SWS	0.0	-	-	-	Telescope sent to 180.000
16:36:53.05	SWS	-	-	-	-	Dark measurement started.
16:36:54.19	SWS	179.8	-	-	-	Telescope stopped.
16:36:54.51	SWS	-	-	-	-	Idling
16:36:57.22	SWS	-	-	30	-	VIS int.time changed from 100ms to 30ms.
16:36:57.91	SWS	-	-	-	-	Dark measurement started.
16:36:59.63	SWS	180.0	-	-	-	Telescope sent to 180.000
16:36:59.64	SWS	-	-	-	-	Idling
16:37:00.08	SWS	-	-	-	-	Manual scene recording started.
16:37:42.08	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:37:43.56	SWS	-	-	-	-	Dark measurement started.
16:37:45.01	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:37:47.36	SWS	-	-	50	-	VIS int.time changed from 30ms to 50ms.
16:37:48.58	SWS	-	-	-	-	Dark measurement started.
16:37:50.02	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:37:50.84	SWS	-	-	-	-	Manual scene recording started.
16:38:56.09	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:38:56.93	SWS	-	-	-	-	Idling
16:38:57.60	SWS	-	-	-	-	Dark measurement started.
16:38:59.07	SWS	-	-	-	-	Idling
16:38:59.30	SWS	180.0	-	-	-	Telescope sent to 0.000
16:39:01.06	SWS	0.3	-	-	-	Telescope stopped.
16:39:02.96	SWS	-	-	-	-	Manual scene recording started.
16:39:04.91	SWS	0.0	-	-	-	Telescope sent to 0.000
16:39:07.47	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:39:08.31	SWS	-	-	-	-	Idling
16:39:11.02	SWS	-	-	35	-	VIS int.time changed from 50ms to 35ms.
16:39:11.81	SWS	-	-	-	-	Dark measurement started.
16:39:13.51	SWS	-	-	-	-	Idling
16:39:14.64	SWS	-	-	-	-	Manual scene recording started.
16:39:29.55	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:39:32.75	SWS	-	-	30	-	VIS int.time changed from 35ms to 30ms.
16:39:35.01	SWS	-	-	-	-	Dark measurement started.
16:39:36.46	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:39:37.29	SWS	-	-	-	-	Manual scene recording started.
16:39:47.23	USH	-	-	-	-	Manual scene sampling started - Not Recording!
16:39:51.18	USH	-	-	-	-	Idling
16:39:52.01	USH	-	-	-	-	Dark measurement started.
16:39:53.46	USH	-	-	-	-	Idling
16:39:53.94	USH	-	-	-	-	Manual scene recording started.
16:39:55.63	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
16:39:56.96	LSH	-	-	-	-	Idling
16:39:57.58	LSH	-	-	-	-	Dark measurement started.

16:39:58.41	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
16:40:04.06	LSH	-	-	-	-	Idling
16:40:05.05	LSH	-	-	-	-	Manual scene recording started.
16:41:58.49	USH	-	-	-	-	Idling
16:41:58.52	SWS	-	-	-	-	Idling
16:41:58.86	LSH	-	-	-	-	Idling
16:42:02.11	---	-	-	-	-	Reset shutters.
16:42:06.23	USH	-	-	-	-	Dark measurement started.
16:42:06.25	SWS	-	-	-	-	Dark measurement started.
16:42:06.26	LSH	-	-	-	-	Dark measurement started.
16:42:07.50	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
16:42:07.72	USH	-	-	-	-	Idling
16:42:07.91	SWS	-	-	-	-	Idling
16:42:11.92	USH	-	-	300	-	VIS int.time changed from 100ms to 300ms.
16:42:11.93	USH	-	-	-	300	NIR int.time changed from 100ms to 300ms.
16:42:13.14	LSH	-	-	-	-	Idling
16:42:19.08	SWS	-	-	-	-	Dark measurement started.
16:42:19.08	LSH	-	-	-	-	Dark measurement started.
16:42:19.10	USH	-	-	-	-	Dark measurement started.
16:42:20.19	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
16:42:20.95	SWS	-	-	-	-	Idling
16:42:23.43	USH	-	-	-	-	Idling
16:42:23.80	USH	-	-	-	-	Dark measurement started.
16:42:23.81	SWS	-	-	-	-	Dark measurement started.
16:42:25.45	SWS	-	-	-	-	Idling
16:42:25.81	LSH	-	-	-	-	Idling
16:42:26.19	SWS	0.0	-	-	-	Telescope sent to 180.000
16:42:27.26	USH	-	-	-	-	Idling
16:42:27.93	SWS	179.7	-	-	-	Telescope stopped.
16:42:32.90	SWS	180.0	-	-	-	Telescope sent to 180.000
16:42:40.10	SWS	-	-	-	-	Dark measurement started.
16:42:41.54	SWS	-	-	-	-	Idling
16:42:42.32	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:42:46.21	USH	-	-	-	-	Manual scene sampling started - Not Recording!
16:42:47.14	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
16:44:09.16	USH	-	-	-	-	Idling
16:44:12.01	USH	-	-	200	-	VIS int.time changed from 300ms to 200ms.
16:44:12.02	USH	-	-	-	200	NIR int.time changed from 300ms to 200ms.
16:44:14.45	USH	-	-	-	-	Dark measurement started.
16:44:17.36	USH	-	-	-	-	Idling
16:44:18.33	USH	-	-	-	-	Manual scene sampling started - Not Recording!
16:44:26.66	USH	-	-	300	-	VIS int.time changed from 200ms to 300ms.
16:44:26.67	USH	-	-	-	300	NIR int.time changed from 200ms to 300ms.
16:44:28.51	USH	-	-	-	-	Idling
16:44:29.39	USH	-	-	-	-	Dark measurement started.
16:44:32.83	USH	-	-	-	-	Idling
16:44:33.22	USH	-	-	-	-	Manual scene sampling started - Not Recording!
16:44:36.71	USH	-	-	-	-	Idling
16:44:37.02	SWS	-	-	-	-	Idling
16:44:37.16	LSH	-	-	-	-	Idling
16:44:37.86	---	-	-	-	-	Reset shutters.
16:44:41.55	USH	-	-	-	-	Dark measurement started.
16:44:41.56	LSH	-	-	-	-	Dark measurement started.
16:44:41.57	SWS	-	-	-	-	Dark measurement started.
16:44:42.60	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
16:44:43.42	SWS	-	-	-	-	Idling
16:44:45.03	USH	-	-	-	-	Idling
16:44:45.42	SWS	-	-	-	-	Dark measurement started.
16:44:45.44	USH	-	-	-	-	Dark measurement started.
16:44:46.88	SWS	-	-	-	-	Idling
16:44:48.23	LSH	-	-	-	-	Idling
16:44:49.07	USH	-	-	-	-	Idling
16:44:49.53	SWS	-	-	-	-	Dark measurement started.
16:44:49.54	LSH	-	-	-	-	Dark measurement started.
16:44:49.58	USH	-	-	-	-	Dark measurement started.
16:44:50.99	SWS	-	-	-	-	Idling
16:44:53.38	USH	-	-	-	-	Idling
16:44:53.89	SWS	-	-	-	-	Dark measurement started.
16:44:53.89	USH	-	-	-	-	Dark measurement started.

16:44:55.33	SWS	-	-	-	-	Idling
16:44:56.19	LSH	-	-	-	-	Idling
16:44:57.53	USH	-	-	-	-	Idling
16:45:04.30	USH	-	-	-	-	Manual scene sampling started - Not Recording!
16:45:04.30	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
16:45:04.31	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:46:01.52	SWS	-	-	-	-	Manual scene recording started.
16:46:01.96	LSH	-	-	-	-	Manual scene recording started.
16:46:02.07	USH	-	-	-	-	Manual scene recording started.
16:48:05.05	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:48:05.88	SWS	-	-	-	-	Idling
16:48:06.81	SWS	-	-	-	-	Dark measurement started.
16:48:08.26	SWS	-	-	-	-	Idling
16:48:08.50	SWS	180.0	-	-	-	Telescope sent to 0.000
16:48:10.23	SWS	0.3	-	-	-	Telescope stopped.
16:48:12.62	SWS	-	-	100	-	VIS int.time changed from 30ms to 100ms.
16:48:13.18	SWS	-	-	-	-	Dark measurement started.
16:48:14.99	SWS	-	-	-	-	Idling
16:48:15.16	SWS	0.0	-	-	-	Telescope sent to 0.000
16:48:16.67	SWS	-	-	-	100	NIR int.time changed from 100ms to 100ms.
16:48:19.03	SWS	-	-	300	-	VIS int.time changed from 100ms to 300ms.
16:48:19.04	SWS	-	-	-	300	NIR int.time changed from 100ms to 300ms.
16:48:19.78	SWS	-	-	-	-	Dark measurement started.
16:48:23.72	SWS	-	-	-	-	Idling
16:48:24.22	SWS	-	-	-	-	Manual scene recording started.
16:49:46.00	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:49:47.02	SWS	-	-	-	-	Idling
16:49:49.30	SWS	0.0	-	-	-	Telescope sent to 180.000
16:49:49.82	SWS	-	-	-	-	Dark measurement started.
16:49:51.01	SWS	179.1	-	-	-	Telescope stopped.
16:49:53.28	SWS	-	-	-	-	Idling
16:49:53.83	SWS	-	-	-	-	Dark measurement started.
16:49:55.93	SWS	180.0	-	-	-	Telescope sent to 180.000
16:49:57.27	SWS	-	-	-	-	Idling
16:50:01.00	SWS	-	-	50	-	VIS int.time changed from 300ms to 50ms.
16:50:01.01	SWS	-	-	-	50	NIR int.time changed from 300ms to 50ms.
16:50:02.40	SWS	-	-	-	-	Dark measurement started.
16:50:03.82	SWS	-	-	-	-	Idling
16:50:04.52	SWS	-	-	-	-	Manual scene recording started.
16:50:06.96	USH	-	-	-	-	Manual scene sampling started - Not Recording!
16:50:08.83	USH	-	-	-	-	Idling
16:50:09.51	USH	-	-	-	-	Dark measurement started.
16:50:12.96	USH	-	-	-	-	Idling
16:50:13.42	USH	-	-	-	-	Manual scene recording started.
16:50:14.95	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
16:50:16.29	LSH	-	-	-	-	Idling
16:50:16.94	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
16:50:19.39	LSH	-	-	-	-	Idling
16:50:20.33	LSH	-	-	-	-	Dark measurement started.
16:50:21.18	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
16:50:26.80	LSH	-	-	-	-	Idling
16:50:27.85	LSH	-	-	-	-	Manual scene recording started.
16:50:49.92	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:50:51.12	SWS	-	-	-	50	NIR int.time changed from 50ms to 50ms.
16:50:53.19	SWS	-	-	-	100	NIR int.time changed from 50ms to 100ms.
16:50:55.05	SWS	-	-	-	-	Dark measurement started.
16:50:56.51	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:50:58.58	SWS	-	-	-	-	Dark measurement started.
16:51:00.02	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:51:00.85	SWS	-	-	-	-	Manual scene recording started.
16:52:06.70	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:52:07.56	SWS	-	-	-	-	Idling
16:52:08.62	SWS	-	-	-	-	Dark measurement started.
16:52:10.07	SWS	-	-	-	-	Idling
16:52:10.21	SWS	180.0	-	-	-	Telescope sent to 0.000
16:52:11.95	SWS	0.1	-	-	-	Telescope stopped.
16:52:12.50	SWS	-	-	-	50	NIR int.time changed from 100ms to 50ms.
16:52:14.58	SWS	-	-	300	-	VIS int.time changed from 50ms to 300ms.
16:52:14.59	SWS	-	-	-	300	NIR int.time changed from 50ms to 300ms.

16:52:15.49	SWS	-	-	-	-	Dark measurement started.
16:52:16.99	SWS	0.0	-	-	-	Telescope sent to 0.000
16:52:19.44	SWS	-	-	-	-	Idling
16:52:20.02	SWS	-	-	-	-	Manual scene recording started.
16:53:43.06	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:53:44.10	SWS	-	-	-	-	Idling
16:53:44.62	SWS	-	-	-	-	Dark measurement started.
16:53:46.24	SWS	0.0	-	-	-	Telescope sent to 180.000
16:53:47.97	SWS	179.5	-	-	-	Telescope stopped.
16:53:48.08	SWS	-	-	-	-	Idling
16:53:48.64	SWS	-	-	-	300	NIR int.time changed from 300ms to 300ms.
16:53:50.72	SWS	-	-	50	-	VIS int.time changed from 300ms to 50ms.
16:53:53.36	SWS	-	-	-	100	NIR int.time changed from 300ms to 100ms.
16:53:53.87	SWS	-	-	-	-	Dark measurement started.
16:53:55.78	SWS	180.0	-	-	-	Telescope sent to 180.000
16:53:55.81	SWS	-	-	-	-	Idling
16:53:56.82	SWS	-	-	-	-	Manual scene recording started.
16:54:43.52	USH	-	-	-	-	Manual scene sampling started - Not Recording!
16:54:45.38	USH	-	-	-	-	Idling
16:54:46.23	USH	-	-	-	-	Dark measurement started.
16:54:49.70	USH	-	-	-	-	Idling
16:54:50.06	USH	-	-	-	-	Manual scene recording started.
16:54:51.37	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
16:54:52.71	LSH	-	-	-	-	Idling
16:54:54.50	LSH	-	-	-	-	Dark measurement started.
16:54:55.33	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
16:55:01.59	LSH	-	-	-	-	Idling
16:55:01.95	LSH	-	-	-	-	Manual scene recording started.
16:55:10.10	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:55:10.93	SWS	-	-	-	-	Idling
16:55:12.38	SWS	180.0	-	-	-	Telescope sent to 0.000
16:55:13.38	SWS	-	-	-	-	Dark measurement started.
16:55:14.09	SWS	1.4	-	-	-	Telescope stopped.
16:55:14.82	SWS	-	-	-	-	Idling
16:55:16.08	SWS	-	-	-	50	NIR int.time changed from 100ms to 50ms.
16:55:18.57	SWS	-	-	300	-	VIS int.time changed from 50ms to 300ms.
16:55:18.57	SWS	-	-	-	300	NIR int.time changed from 50ms to 300ms.
16:55:19.31	SWS	-	-	-	-	Dark measurement started.
16:55:20.87	SWS	-0.0	-	-	-	Telescope sent to 0.000
16:55:23.27	SWS	-	-	-	-	Idling
16:55:23.61	SWS	-	-	-	-	Manual scene recording started.
16:56:12.04	SWS	-	-	-	-	Idling
16:56:12.09	USH	-	-	-	-	Idling
16:56:12.40	LSH	-	-	-	-	Idling
16:56:15.29	---	-	-	-	-	Reset shutters.
16:56:20.09	SWS	-	-	-	-	Dark measurement started.
16:56:20.09	LSH	-	-	-	-	Dark measurement started.
16:56:20.11	USH	-	-	-	-	Dark measurement started.
16:56:21.13	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
16:56:23.53	SWS	-	-	-	-	Idling
16:56:23.93	USH	-	-	-	-	Idling
16:56:24.29	SWS	-	-	-	-	Dark measurement started.
16:56:24.31	USH	-	-	-	-	Dark measurement started.
16:56:26.75	LSH	-	-	-	-	Idling
16:56:27.76	SWS	-	-	-	-	Idling
16:56:27.97	USH	-	-	-	-	Idling
16:56:29.85	SWS	-	-	-	-	Dark measurement started.
16:56:29.86	LSH	-	-	-	-	Dark measurement started.
16:56:29.87	USH	-	-	-	-	Dark measurement started.
16:56:30.89	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
16:56:33.32	SWS	-	-	-	-	Idling
16:56:33.73	USH	-	-	-	-	Idling
16:56:34.09	SWS	-	-	-	-	Dark measurement started.
16:56:34.09	USH	-	-	-	-	Dark measurement started.
16:56:36.54	LSH	-	-	-	-	Idling
16:56:37.55	SWS	-	-	-	-	Idling
16:56:37.73	USH	-	-	-	-	Idling
16:56:39.26	SWS	0.0	-	-	-	Telescope sent to 180.000
16:56:41.01	SWS	179.9	-	-	-	Telescope stopped.

16:56:42.49	SWS	180.0	-	-	-	Telescope sent to 180.000
16:56:45.53	SWS	-	-	-	300	NIR int.time changed from 300ms to 300ms.
16:56:49.90	SWS	-	-	75	-	VIS int.time changed from 300ms to 75ms.
16:56:53.39	SWS	-	-	50	-	VIS int.time changed from 75ms to 50ms.
16:56:56.57	SWS	-	-	-	100	NIR int.time changed from 300ms to 100ms.
16:57:00.23	SWS	-	-	-	-	Dark measurement started.
16:57:02.16	SWS	-	-	-	-	Idling
16:57:05.97	USH	-	-	-	-	Manual scene sampling started - Not Recording!
16:57:05.98	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
16:57:05.99	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
17:00:51.10	SWS	-	-	-	-	Idling
17:00:51.27	USH	-	-	-	-	Idling
17:00:51.55	LSH	-	-	-	-	Idling
17:00:51.76	---	-	-	-	-	Reset shutters.
17:00:57.62	SWS	-	-	-	-	Dark measurement started.
17:00:57.62	LSH	-	-	-	-	Dark measurement started.
17:00:57.65	USH	-	-	-	-	Dark measurement started.
17:00:58.69	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
17:00:59.11	SWS	-	-	-	-	Idling
17:01:01.50	USH	-	-	-	-	Idling
17:01:01.82	SWS	-	-	-	-	Dark measurement started.
17:01:01.84	USH	-	-	-	-	Dark measurement started.
17:01:03.27	SWS	-	-	-	-	Idling
17:01:04.33	LSH	-	-	-	-	Idling
17:01:05.47	USH	-	-	-	-	Idling
17:01:05.89	LSH	-	-	-	-	Dark measurement started.
17:01:05.89	USH	-	-	-	-	Dark measurement started.
17:01:05.92	SWS	-	-	-	-	Dark measurement started.
17:01:07.75	SWS	-	-	-	-	Idling
17:01:09.54	USH	-	-	-	-	Idling
17:01:09.89	USH	-	-	-	-	Dark measurement started.
17:01:09.90	SWS	-	-	-	-	Dark measurement started.
17:01:11.57	SWS	-	-	-	-	Idling
17:01:12.36	LSH	-	-	-	-	Idling
17:01:13.37	USH	-	-	-	-	Idling
17:01:14.73	USH	-	-	-	-	Manual scene sampling started - Not Recording!
17:01:14.74	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
17:01:14.75	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:01:39.28	---	-	-	-	-	*** Freezer temp 10 deg C
17:02:09.50	SWS	-	-	-	-	Manual scene recording started.
17:02:10.05	USH	-	-	-	-	Manual scene recording started.
17:02:10.17	LSH	-	-	-	-	Manual scene recording started.
17:03:33.30	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:03:34.16	SWS	-	-	-	-	Idling
17:03:34.74	SWS	-	-	-	-	Dark measurement started.
17:03:36.20	SWS	-	-	-	-	Idling
17:03:36.76	SWS	180.0	-	-	-	Telescope sent to 0.000
17:03:38.51	SWS	0.1	-	-	-	Telescope stopped.
17:03:38.79	SWS	-	-	-	50	NIR int.time changed from 100ms to 50ms.
17:03:40.83	SWS	-	-	300	-	VIS int.time changed from 50ms to 300ms.
17:03:40.84	SWS	-	-	-	300	NIR int.time changed from 50ms to 300ms.
17:03:41.74	SWS	-	-	-	-	Dark measurement started.
17:03:43.97	SWS	-0.0	-	-	-	Telescope sent to 0.000
17:03:46.05	SWS	-	-	-	-	Idling
17:03:46.42	SWS	-	-	-	-	Manual scene recording started.
17:05:08.81	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:05:09.87	SWS	-	-	-	-	Idling
17:05:10.05	SWS	-	-	-	-	Dark measurement started.
17:05:11.71	SWS	0.0	-	-	-	Telescope sent to 0.000
17:05:13.50	SWS	-	-	-	-	Idling
17:05:14.06	SWS	-	-	-	300	NIR int.time changed from 300ms to 300ms.
17:05:16.53	SWS	-	-	50	-	VIS int.time changed from 300ms to 50ms.
17:05:18.40	SWS	-	-	-	100	NIR int.time changed from 300ms to 100ms.
17:05:19.10	SWS	-	-	-	-	Dark measurement started.
17:05:21.09	SWS	-	-	-	-	Idling
17:05:21.20	SWS	-0.0	-	-	-	Telescope sent to 0.000
17:05:21.59	SWS	-	-	-	-	Manual scene recording started.
17:05:24.36	USH	-	-	-	-	Manual scene sampling started - Not Recording!
17:05:25.40	USH	-	-	-	-	Idling

17:05:26.13	USH	-	-	-	-	Dark measurement started.
17:05:29.59	USH	-	-	-	-	Idling
17:05:29.98	USH	-	-	-	-	Manual scene recording started.
17:05:31.70	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
17:05:33.03	LSH	-	-	-	-	Idling
17:05:33.44	LSH	-	-	-	-	Dark measurement started.
17:05:34.28	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
17:05:39.91	LSH	-	-	-	-	Idling
17:05:40.26	LSH	-	-	-	-	Manual scene recording started.
17:05:49.09	SWS	0.0	-	-	-	Telescope sent to 180.000
17:05:50.83	SWS	179.7	-	-	-	Telescope stopped.
17:05:52.30	SWS	180.0	-	-	-	Telescope sent to 180.000
17:08:14.45	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:08:15.33	SWS	-	-	-	-	Idling
17:08:16.34	SWS	-	-	-	-	Dark measurement started.
17:08:17.81	SWS	-	-	-	-	Idling
17:08:18.60	SWS	180.0	-	-	-	Telescope sent to 0.000
17:08:19.96	SWS	-	-	-	50	NIR int.time changed from 100ms to 50ms.
17:08:20.34	SWS	0.1	-	-	-	Telescope stopped.
17:08:21.87	SWS	-	-	300	-	VIS int.time changed from 50ms to 300ms.
17:08:21.88	SWS	-	-	-	300	NIR int.time changed from 50ms to 300ms.
17:08:22.56	SWS	-	-	-	-	Dark measurement started.
17:08:24.12	SWS	0.0	-	-	-	Telescope sent to 0.000
17:08:26.52	SWS	-	-	-	-	Idling
17:08:26.94	SWS	-	-	-	-	Manual scene recording started.
17:08:38.51	USH	-	-	-	-	Manual scene sampling started - Not Recording!
17:08:39.56	USH	-	-	-	-	Idling
17:08:39.94	USH	-	-	-	-	Dark measurement started.
17:08:43.38	USH	-	-	-	-	Idling
17:08:43.64	USH	-	-	-	-	Manual scene recording started.
17:08:45.71	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
17:08:47.05	LSH	-	-	-	-	Idling
17:08:48.19	LSH	-	-	-	-	Dark measurement started.
17:08:49.03	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
17:08:54.67	LSH	-	-	-	-	Idling
17:08:56.27	LSH	-	-	-	-	Manual scene recording started.
17:09:53.26	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:09:54.32	SWS	-	-	-	-	Idling
17:09:55.81	SWS	-	-	-	-	Dark measurement started.
17:09:57.75	SWS	0.0	-	-	-	Telescope sent to 180.000
17:09:59.29	SWS	-	-	-	-	Idling
17:09:59.51	SWS	179.9	-	-	-	Telescope stopped.
17:10:00.36	SWS	-	-	-	300	NIR int.time changed from 300ms to 300ms.
17:10:02.00	SWS	-	-	50	-	VIS int.time changed from 300ms to 50ms.
17:10:03.90	SWS	-	-	-	100	NIR int.time changed from 300ms to 100ms.
17:10:05.08	SWS	-	-	-	-	Dark measurement started.
17:10:06.69	SWS	180.0	-	-	-	Telescope sent to 180.000
17:10:07.02	SWS	-	-	-	-	Idling
17:10:07.41	SWS	-	-	-	-	Manual scene recording started.
17:11:29.45	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:11:31.54	SWS	-	-	-	-	Dark measurement started.
17:11:32.99	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:11:35.79	SWS	180.0	-	-	-	Telescope sent to 0.000
17:11:36.64	SWS	-	-	-	50	NIR int.time changed from 100ms to 50ms.
17:11:37.53	SWS	0.1	-	-	-	Telescope stopped.
17:11:38.90	SWS	-	-	300	-	VIS int.time changed from 50ms to 300ms.
17:11:38.90	SWS	-	-	-	300	NIR int.time changed from 50ms to 300ms.
17:11:40.75	SWS	-	-	-	-	Dark measurement started.
17:11:41.86	SWS	-0.0	-	-	-	Telescope sent to 0.000
17:11:44.19	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:11:45.23	SWS	-	-	-	-	Manual scene recording started.
17:12:09.83	SWS	-	-	-	-	Idling
17:12:09.83	USH	-	-	-	-	Idling
17:12:09.89	LSH	-	-	-	-	Idling
17:12:11.51	---	-	-	-	-	Reset shutters.
17:12:14.77	LSH	-	-	-	-	Dark measurement started.
17:12:14.77	USH	-	-	-	-	Dark measurement started.
17:12:14.78	SWS	-	-	-	-	Dark measurement started.
17:12:15.60	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.



17:12:18.42	USH	-	-	-	-	Idling
17:12:18.63	SWS	-	-	-	-	Idling
17:12:19.46	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:12:19.48	USH	-	-	-	-	Manual scene sampling started - Not Recording!
17:12:21.24	LSH	-	-	-	-	Idling
17:12:22.45	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
17:16:23.09	---	-	-	-	-	*** Freezer temp 10 deg C
17:16:54.28	LSH	-	-	-	-	Idling
17:16:54.35	SWS	-	-	-	-	Idling
17:16:54.54	USH	-	-	-	-	Idling
17:17:41.00	USH	-	-	-	-	Dark measurement started.
17:17:41.01	LSH	-	-	-	-	Dark measurement started.
17:17:41.02	SWS	-	-	-	-	Dark measurement started.
17:17:42.04	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
17:17:44.65	USH	-	-	-	-	Idling
17:17:45.41	SWS	-	-	-	-	Idling
17:17:45.68	SWS	-	-	-	-	Dark measurement started.
17:17:45.69	USH	-	-	-	-	Dark measurement started.
17:17:47.68	LSH	-	-	-	-	Idling
17:17:49.15	SWS	-	-	-	-	Idling
17:17:49.35	USH	-	-	-	-	Idling
17:17:49.87	SWS	-	-	-	-	Dark measurement started.
17:17:49.87	LSH	-	-	-	-	Dark measurement started.
17:17:49.93	USH	-	-	-	-	Dark measurement started.
17:17:50.91	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
17:17:53.32	SWS	-	-	-	-	Idling
17:17:53.73	USH	-	-	-	-	Idling
17:17:55.43	SWS	-	-	-	-	Dark measurement started.
17:17:55.44	USH	-	-	-	-	Dark measurement started.
17:17:56.56	LSH	-	-	-	-	Idling
17:17:58.89	SWS	-	-	-	-	Idling
17:17:59.43	USH	-	-	-	-	Idling
17:17:59.73	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:17:59.76	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
17:17:59.76	USH	-	-	-	-	Manual scene sampling started - Not Recording!
17:18:59.19	SWS	-	-	-	-	Idling
17:18:59.58	USH	-	-	-	-	Idling
17:18:59.64	LSH	-	-	-	-	Idling
17:19:05.07	---	-	-	-	-	Reset shutters.
17:19:18.06	SWS	-	-	-	-	Dark measurement started.
17:19:18.07	LSH	-	-	-	-	Dark measurement started.
17:19:18.08	USH	-	-	-	-	Dark measurement started.
17:19:19.10	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
17:19:21.52	SWS	-	-	-	-	Idling
17:19:22.20	USH	-	-	-	-	Idling
17:19:24.84	LSH	-	-	-	-	Idling
17:20:28.72	SWS	-	-	-	-	Dark measurement started.
17:20:28.73	LSH	-	-	-	-	Dark measurement started.
17:20:28.74	USH	-	-	-	-	Dark measurement started.
17:20:29.76	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
17:20:32.18	SWS	-	-	-	-	Idling
17:20:32.58	USH	-	-	-	-	Idling
17:20:35.41	LSH	-	-	-	-	Idling
17:21:31.17	LSH	-	-	-	-	Dark measurement started.
17:21:31.17	USH	-	-	-	-	Dark measurement started.
17:21:31.19	SWS	-	-	-	-	Dark measurement started.
17:21:32.14	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
17:21:34.95	USH	-	-	-	-	Idling
17:21:35.23	SWS	-	-	-	-	Idling
17:21:37.89	LSH	-	-	-	-	Idling
17:22:19.60	SWS	-	-	-	-	Dark measurement started.
17:22:19.61	LSH	-	-	-	-	Dark measurement started.
17:22:19.63	USH	-	-	-	-	Dark measurement started.
17:22:20.65	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
17:22:23.30	SWS	-	-	-	-	Idling
17:22:23.68	USH	-	-	-	-	Idling
17:22:24.25	SWS	-	-	-	-	Dark measurement started.
17:22:24.26	USH	-	-	-	-	Dark measurement started.
17:22:26.41	LSH	-	-	-	-	Idling

17:22:27.76	SWS	-	-	-	-	Idling
17:22:28.09	USH	-	-	-	-	Idling
17:22:36.81	LSH	-	-	-	-	Manual scene recording started.
17:22:36.82	USH	-	-	-	-	Manual scene recording started.
17:22:36.83	SWS	-	-	-	-	Manual scene recording started.
17:22:52.11	USH	-	-	-	-	Idling
17:22:52.30	SWS	-	-	-	-	Idling
17:22:52.60	LSH	-	-	-	-	Idling
17:22:55.54	USH	-	-	-	-	Manual scene recording started.
17:22:55.54	LSH	-	-	-	-	Manual scene recording started.
17:22:55.57	SWS	-	-	-	-	Manual scene recording started.
17:24:29.01	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:24:30.04	SWS	-	-	-	-	Idling
17:24:34.17	SWS	0.0	-	-	-	Telescope sent to 180.000
17:24:35.92	SWS	179.9	-	-	-	Telescope stopped.
17:24:35.93	SWS	-	-	-	-	Dark measurement started.
17:24:39.38	SWS	-	-	-	-	Idling
17:24:42.46	SWS	-	-	100	-	VIS int.time changed from 300ms to 100ms.
17:24:42.48	SWS	-	-	-	100	NIR int.time changed from 300ms to 100ms.
17:24:43.92	SWS	-	-	-	-	Dark measurement started.
17:24:45.85	SWS	-	-	-	-	Idling
17:24:45.98	SWS	180.0	-	-	-	Telescope sent to 180.000
17:24:47.03	SWS	-	-	-	-	Manual scene recording started.
17:26:34.03	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:26:34.88	SWS	-	-	-	-	Idling
17:26:36.59	SWS	-	-	-	-	Dark measurement started.
17:26:38.05	SWS	-	-	-	-	Idling
17:26:38.32	SWS	180.0	-	-	-	Telescope sent to 0.000
17:26:40.07	SWS	0.1	-	-	-	Telescope stopped.
17:26:42.76	SWS	-	-	300	-	VIS int.time changed from 100ms to 300ms.
17:26:42.77	SWS	-	-	-	300	NIR int.time changed from 100ms to 300ms.
17:26:43.31	SWS	-	-	-	-	Dark measurement started.
17:26:45.56	SWS	0.0	-	-	-	Telescope sent to 0.000
17:26:47.27	SWS	-	-	-	-	Idling
17:26:48.04	SWS	-	-	-	-	Manual scene recording started.
17:27:06.09	USH	-	-	-	-	Manual scene sampling started - Not Recording!
17:27:07.13	USH	-	-	-	-	Idling
17:27:07.85	USH	-	-	-	-	Dark measurement started.
17:27:09.89	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
17:27:11.24	LSH	-	-	-	-	Idling
17:27:11.33	USH	-	-	-	-	Idling
17:27:11.86	LSH	-	-	-	-	Dark measurement started.
17:27:12.69	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
17:27:12.92	USH	-	-	-	-	Manual scene recording started.
17:27:18.33	LSH	-	-	-	-	Idling
17:27:18.70	LSH	-	-	-	-	Manual scene recording started.
17:28:19.59	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:28:20.62	SWS	-	-	-	-	Idling
17:28:21.43	SWS	-	-	-	-	Dark measurement started.
17:28:23.32	SWS	-0.0	-	-	-	Telescope sent to 180.000
17:28:24.87	SWS	-	-	-	-	Idling
17:28:25.06	SWS	179.9	-	-	-	Telescope stopped.
17:28:26.98	SWS	-	-	-	300	NIR int.time changed from 300ms to 300ms.
17:28:27.67	SWS	-	-	-	300	NIR int.time changed from 300ms to 300ms.
17:28:29.18	SWS	-	-	200	-	VIS int.time changed from 300ms to 200ms.
17:28:29.19	SWS	-	-	-	200	NIR int.time changed from 300ms to 200ms.
17:28:30.09	SWS	-	-	-	-	Dark measurement started.
17:28:32.28	SWS	180.0	-	-	-	Telescope sent to 180.000
17:28:33.02	SWS	-	-	-	-	Idling
17:28:33.44	SWS	-	-	-	-	Manual scene recording started.
17:30:16.35	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:30:17.29	SWS	-	-	-	-	Idling
17:30:18.49	SWS	-	-	-	-	Dark measurement started.
17:30:20.62	SWS	180.0	-	-	-	Telescope sent to 0.000
17:30:20.95	SWS	-	-	-	-	Idling
17:30:21.95	SWS	-	-	-	200	NIR int.time changed from 200ms to 200ms.
17:30:22.38	SWS	0.0	-	-	-	Telescope stopped.
17:30:22.45	SWS	-	-	-	200	NIR int.time changed from 200ms to 200ms.
17:30:23.93	SWS	-	-	300	-	VIS int.time changed from 200ms to 300ms.

17:30:23.94	SWS	-	-	-	300	NIR int.time changed from 200ms to 300ms.
17:30:24.65	SWS	-	-	-	-	Dark measurement started.
17:30:26.71	SWS	0.0	-	-	-	Telescope sent to 0.000
17:30:28.60	SWS	-	-	-	-	Idling
17:30:29.70	SWS	-	-	-	-	Manual scene recording started.
17:30:32.80	USH	-	-	-	-	Manual scene sampling started - Not Recording!
17:30:33.83	USH	-	-	-	-	Idling
17:30:34.66	USH	-	-	-	-	Dark measurement started.
17:30:38.13	USH	-	-	-	-	Idling
17:30:38.49	USH	-	-	-	-	Manual scene recording started.
17:30:39.72	LSH	-	-	-	-	Manual scene sampling started - Not Recording!
17:30:41.04	LSH	-	-	-	-	Idling
17:30:42.14	LSH	-	-	-	-	Dark measurement started.
17:30:42.98	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
17:30:48.62	LSH	-	-	-	-	Idling
17:30:49.42	LSH	-	-	-	-	Manual scene recording started.
17:31:39.69	---	-	-	-	-	*** Freezer temp 10 deg C
17:32:04.36	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:32:05.39	SWS	-	-	-	-	Idling
17:32:05.85	SWS	-	-	-	-	Dark measurement started.
17:32:07.70	SWS	0.0	-	-	-	Telescope sent to 180.000
17:32:09.31	SWS	-	-	-	-	Idling
17:32:09.47	SWS	180.0	-	-	-	Telescope stopped.
17:32:11.02	SWS	-	-	200	-	VIS int.time changed from 300ms to 200ms.
17:32:11.03	SWS	-	-	-	200	NIR int.time changed from 300ms to 200ms.
17:32:11.57	SWS	-	-	-	-	Dark measurement started.
17:32:13.23	SWS	180.0	-	-	-	Telescope sent to 180.000
17:32:14.51	SWS	-	-	-	-	Idling
17:32:15.00	SWS	-	-	-	-	Manual scene recording started.
17:33:35.97	SWS	-	-	-	-	Manual scene sampling started - Not Recording!
17:33:36.90	SWS	-	-	-	-	Idling
17:33:37.96	SWS	-	-	-	-	Dark measurement started.
17:33:39.37	SWS	180.0	-	-	-	Telescope sent to 0.000
17:33:40.43	SWS	-	-	-	-	Idling
17:33:41.14	SWS	0.0	-	-	-	Telescope stopped.
17:33:42.00	SWS	-	-	300	-	VIS int.time changed from 200ms to 300ms.
17:33:42.01	SWS	-	-	-	300	NIR int.time changed from 200ms to 300ms.
17:33:42.70	SWS	-	-	-	-	Dark measurement started.
17:33:44.88	SWS	0.0	-	-	-	Telescope sent to 0.000
17:33:46.64	SWS	-	-	-	-	Idling
17:33:50.64	SWS	-	-	-	-	Manual scene recording started.
17:34:55.73	LSH	-	-	-	-	Idling
17:34:55.79	SWS	-	-	-	-	Idling
17:34:55.80	USH	-	-	-	-	Idling
17:34:59.86	---	-	-	-	-	Reset shutters.
17:35:06.19	SWS	-	-	-	-	Dark measurement started.
17:35:06.20	LSH	-	-	-	-	Dark measurement started.
17:35:06.21	USH	-	-	-	-	Dark measurement started.
17:35:07.24	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
17:35:09.67	SWS	-	-	-	-	Idling
17:35:10.07	USH	-	-	-	-	Idling
17:35:10.54	USH	-	-	-	-	Dark measurement started.
17:35:10.55	SWS	-	-	-	-	Dark measurement started.
17:35:12.90	LSH	-	-	-	-	Idling
17:35:14.00	USH	-	-	-	-	Idling
17:35:14.22	SWS	-	-	-	-	Idling
17:35:24.74	SWS	0.0	-	-	-	Telescope sent to 90.000
17:35:25.91	SWS	90.0	-	-	-	Telescope stopped.
17:35:27.62	SWS	-	-	-	-	Dark measurement started.
17:35:27.63	LSH	-	-	-	-	Dark measurement started.
17:35:27.65	USH	-	-	-	-	Dark measurement started.
17:35:28.67	LSH	-	-	-	-	Warning: Abnormally bright dark measurement.
17:35:31.09	SWS	-	-	-	-	Idling
17:35:31.48	USH	-	-	-	-	Idling
17:35:31.92	SWS	-	-	-	-	Dark measurement started.
17:35:31.92	USH	-	-	-	-	Dark measurement started.
17:35:34.30	LSH	-	-	-	-	Idling
17:35:35.39	SWS	-	-	-	-	Idling
17:35:35.58	USH	-	-	-	-	Idling

# Flight:

B397

## KEY

Not Fitted

Fitted, Not Operated

Duff Data

Minor Problems

OK

### Thermometers

Cabin Temperature:

Heimann:

Deiced Temp:

Non-deiced Temp:

### Hygrometers

FWVS:

Buck CR2:

General Eastern:

Johnson Williams:

Nevzorov:

Total Water Probe:

### Cameras

Downward Facing:

Forward Facing:

Rearward Facing:

Upward Facing:

### Navigation + Aircraft

Cruciform GPS:

GIN Applanix:

INU Honeywell:

Radar Altimeter:

RVSM IAS:

RVSM Static Pressure:

XR5 GPS:

### Misc Core

AMTG:

AVAPS:

Cabin Pressure:

Fax machine:

Printer:

S9 Static Pressure:

Satcom C:

Satcom H:

Turb Centre-Static:

Turb Left Right:

Turb Up-Down:

Turb Horizontal Chk:

Turb Vertical Chk:

Weather Radar:

### DLUs:

DLU AERACK:

DLU BBR Lower:

DLU BBR Upper:

DLU Core Chem:

DLU Core Consoles:

DLU Port Aft:

DLU Port Fwd:

DLU Stbd Fwd:

### Radiometers

#### Lower:

BBR (clear) Lower:

BBR (IR) Lower:

BBR (red) Lower:

#### Upper:

BBR (clear) Upper:

BBR (IR) Upper:

BBR (red) Upper:

ARIES:

DEIMOS:

IR Camera:

JNO2 Lower:

JNO2 Upper:

JO1D Lower:

JO1D Upper:

MARSS:

SHIMS Lower:

SHIMS Upper:

SWS:

TAFTS:

### Cloud Probes

2DC:

2DP:

FFSSP:

PCASP:

2DS:

ADA:

CAPS:

CCN:

CDP:

CIP 100:

CIP 25:

CPI:

CVI:

SID1:

SID2:

### Aerosol

CPC 3025A:

CPC 3786 H2O:

Filters 47mm:

Filters 90mm:

Neph - Dry:

Neph - Wet:

PSAP:

AMS:

CPC 3025 (AMS)

INC:

VACC:

CPC 3010A (CVI):

SP2:

UHSAS:

### Chemistry

CO Aerolaser 5002:

NOx TE42C:

Ozone TE49C:

Ozone TE49:

SO2 TE43C:

TDLAS (NIR) CH4:

TDLAS (NIR) CO2:

FAGE:

Formaldehyde:

NOx FAAM:

NOxy:

ORAC:

PAN:

PERCA:

Peroxide:

PTRMS:

TDLAS (1C):

WAS Bags:

WAS Bottles:

### Misc Non-Core

CASI/ATM:

LIDAR:

LTI:

SAW Hygrometer:



## Faults / Incidents Log

**Flight No. B397**

**Date: 22/08/08**

### Instruments

1. Outboard PC keyboard at Aft CorCon not locked. Open out on t/o
2. Chem DLU – From Option 7, DRS Control Menu, Type 4 messages being collected (as standard) but T4 incrementing whereas all other DLUS have T2 messages. Reset DLU CB then CoreChem DLU incrementing T2 messages
3. HORACE – Still problems with GIN winds. Modified h\_build.com, hor\_calcs h\_gin\_log etc files since last flight.
4. HORACE / AVAPS – AVAPS pc stopped receiving HORACE data several times. Restart h\_avaps\_snd but remained intermittent.
5. Nephelometer – Flat-lining at -0.5 with some structure but didn't look real. Reset Neph power and zeroed it on ground during refuel, then okay.
6. 2DC – noisy
7. FFSSP – noisy. Some computer problems.
8. PCASP – noisy.
9. CO – same problem as on OP3 with baseline drifting all the time due to temperature changes. Will need extra post-flight processing to sort out data.
10. MPDS – Okay during 1<sup>st</sup> flight but couldn't get a connection on the ground at St Mawgan and after t/o. Came up later. Tested connection speed with Speedtest.net. It thinks we are in Australia! Sending data to / from server in Adelaide. Download 30kb/s, upload 11kb/s
11. MARSS – good except for laptop catastrophic crash towards end of 2<sup>nd</sup> flight. Didn't restart it.
12. DEIMOS – question mark over data
13. AVAPS – 1 sonde fell too quickly, 1 had no gps (winds)
14. FWVS – spike on data half way through 1<sup>st</sup> flight, otherwise okay.
15. SWS – shutter sticky for 3/4 hr otherwise ok
16. TAFTS – good, worked whole time. Laser not fitted though so will have to process data a bit differently.

ARIES, CVI, SHIMS okay

### Aircraft

Toilet light intermittent

### ISDN Emails

1 x internet connection speed test - FAAM

### MPDS

2 x email + test link speed – FAAM

2 x Satpics - CAVIAR

### Satcom-H Calls

1 - CAVIAR

### Issues

Nil

## Post Flight - Turb Probe Water Traps

1. Indicate Amount of Water: a) Nil b) 1-2 drops c) ¼ full or more d) Ice present
2. Emptied by:
3. Dried by

# Pre-Flighter's Log

Date:

Flight No: B 397

Pre-Flighter: AWC (+S<sup>2</sup>)

No.	✓ or x	Location	Action	Comments
1	<input type="checkbox"/>	Hangar	Collect spanners for core chem	
<u>Aircraft Cabin: Power-up</u>				
2	<input checked="" type="checkbox"/>	Core Chemistry	Gases x 3 ON	
3	<input checked="" type="checkbox"/>	Cabin	All Racks Checked	
4	<input checked="" type="checkbox"/>	Core Chemistry	Instruments Checked OK	
5	<input checked="" type="checkbox"/>	Core Chemistry	CO Flows Checked OK	
6	<input checked="" type="checkbox"/>	Aft CorCon	All reqd CBs made	
7	<input checked="" type="checkbox"/>	Fore CorCon	CBs made, PCs ON	
8	<input checked="" type="checkbox"/>	HORACE	Optical Disk loaded	
9	<input checked="" type="checkbox"/>	HORACE	Recording data	
10	<input checked="" type="checkbox"/>	HORACE	DLU Status Checked	
11	<input checked="" type="checkbox"/>	HORACE	HORACE Status Checked	
12	<input checked="" type="checkbox"/>	Satcom H	Power LED ON	
13	<input checked="" type="checkbox"/>	Nevzorov	Checked and OFF	
14	<input checked="" type="checkbox"/>	Cameras Pictures	Checked x 4 OK	
15	<input checked="" type="checkbox"/>	Video Laptop	Checked onboard	
16	<input checked="" type="checkbox"/>	FWVS	Set up & check on AUTO	
17	<input checked="" type="checkbox"/>	Delced Rosemount	Heater Checked then OFF	
18	<input checked="" type="checkbox"/>	Heimann	Calibration Checked	
19	<input checked="" type="checkbox"/>	TWC	Fitted & signals checked	
20	<input checked="" type="checkbox"/>	GE	Balance checked then back to DP	
21	<input checked="" type="checkbox"/>	GPS (XR5M)	Checked	
22	<input checked="" type="checkbox"/>	Satcom C	Checked	
23	<input checked="" type="checkbox"/>	Video x 2	Records okay, Rewind	

No.	✓ or x	Location	Action	Comments
24	<input checked="" type="checkbox"/>	Miss. Sci Laptop	Checked Onboard	In cockpit
25	<input checked="" type="checkbox"/>	CNC	Butanol filled	Not fitted
26	<input checked="" type="checkbox"/>	Dry Neph	Power up & Zero Cal	
27	<input checked="" type="checkbox"/>	PSAP	Pre-flight log actions complete	
28	<input checked="" type="checkbox"/>	CGPS	CBs and PC ON	Not fitted
<u>External Checks</u>				
29	<input checked="" type="checkbox"/>	Turb Probe	Clean if reqd, Photo taken	
30	<input checked="" type="checkbox"/>	JW	Cleaned & Checked	
31	<input checked="" type="checkbox"/>	DI Rosemount	Cleaned & Checked	
32	<input checked="" type="checkbox"/>	NDI Rosemount	Cleaned & Checked	
33	<input checked="" type="checkbox"/>	Nevzorov	Cleaned/windings checked	
34	<input checked="" type="checkbox"/>	GE	Cleaned & Checked	
35	<input checked="" type="checkbox"/>	Lower BBRs	Domes cleaned/checked	
36	<input checked="" type="checkbox"/>	Camera Windows	Cleaned	
37	<input checked="" type="checkbox"/>	Heimann	Lens checked OK	
38	<input checked="" type="checkbox"/>	TWC Cover	Fitted if required	
39	<input checked="" type="checkbox"/>	All other covers	Removed	
40	<input checked="" type="checkbox"/>	Pre-flight Bag	Returned to hold	** Check no butanol**
41	<input checked="" type="checkbox"/>	Tools	Check ALL in Toolkit	N.B. Spanner drawer doesn't lock
42	<input checked="" type="checkbox"/>	Tools	Avalon informed	AWC
<u>Avalon Checks</u>				<u>Signed</u>
44	<input type="checkbox"/>	Upper BBRs Checked & Cleaned		
45	<input type="checkbox"/>	ICEX applied		
46	<input type="checkbox"/>	Turb Probe - Traps emptied, detail contents -		a) Nil b) 1-2 drops c) 1/4 full or more
47	<input type="checkbox"/>	Turb Probe - Traps dried and resealed		

AA feedback core console PC not talking to monitor

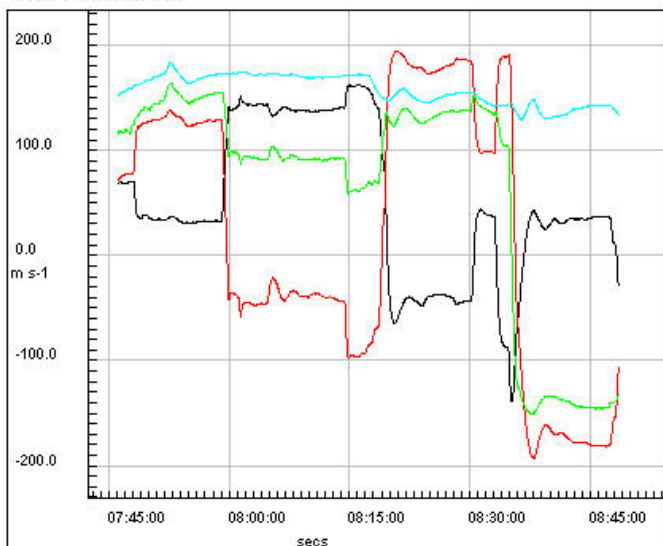
Flight B397 08:48:39

Heading 75 deg Speed 258 knots Height 13.8kft Press 598mb

Lat 50°5.0'N Long 4°54.0'W Wind 111 ms-1/ 74 deg

Temp -8.73C Dewpoint -14.85C

From 07:46:14 to now



Current values				
TIME FROM MIDNIGHT	31719	secs	<input type="radio"/> All	<input checked="" type="checkbox"/> SC
NORTHWARDS WIND COMPONENT	-28.98	m s-1	<input type="radio"/>	
EASTWARDS WIND COMPONENT	-107.35	m s-1	<input type="radio"/>	
VERTICAL WIND COMPONENT	-132.12	m s-1	<input type="radio"/>	
TURB PROBE DRY TAS	133.54	m s-1	<input type="radio"/>	
TURB PROBE WET TAS	133.54	m s-1	<input type="radio"/>	

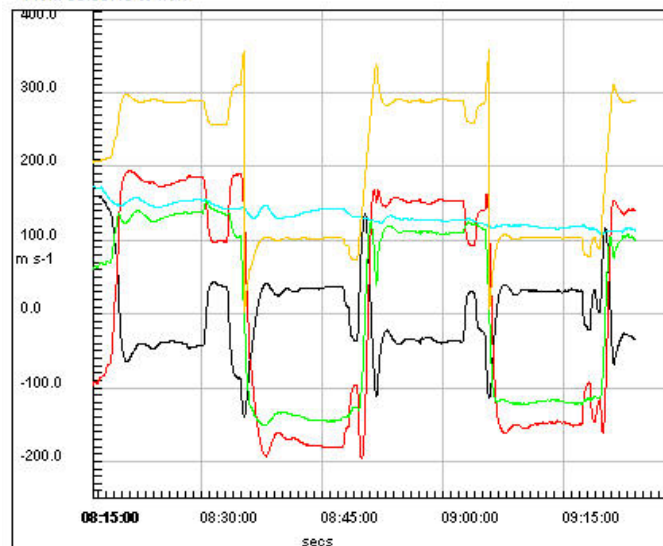
Flight B397 09:24:04

Heading 290 deg Speed 217 knots Height 4.0kft Press 874mb

Lat 50°6.0'N Long 5°0.0'W Wind 144 ms-1/ 283 deg

Temp 5.16C Dewpoint 5.22C

From 08:00:13 to now



Current values				
TIME FROM MIDNIGHT	33843	secs	<input type="radio"/> All	<input checked="" type="checkbox"/> SC
NORTHWARDS WIND COMPONENT	-33.41	m s-1	<input type="radio"/>	
EASTWARDS WIND COMPONENT	140.33	m s-1	<input type="radio"/>	
VERTICAL WIND COMPONENT	100.24	m s-1	<input type="radio"/>	
TURB PROBE DRY TAS	112.74	m s-1	<input type="radio"/>	
TURB PROBE WET TAS	112.74	m s-1	<input type="radio"/>	
GIN HEADING	290.46	deg	<input type="radio"/>	

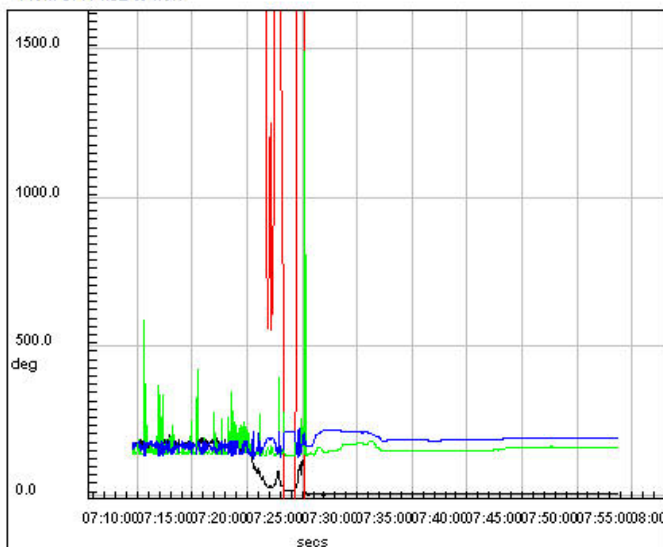
Flight B397 07:58:42

Heading 261 deg Speed 338 knots Height 20.0kft Press 465mb

Lat 51°42.0'N Long 3°6.0'W Wind 132 ms-1/ 255 deg

Temp -24.39C Dewpoint -36.74C

From 07:14:32 to now



Current values				
TIME FROM MIDNIGHT	28722	secs	<input type="radio"/> All	<input checked="" type="checkbox"/> SC
ANGLE OF ATTACK	4.3	deg	<input type="radio"/>	
ANGLE OF SIDESLIP	0.54	deg	<input type="radio"/>	
INS WIND SPEED	132.69	m s-1	<input type="radio"/>	
INS WIND ANGLE	255.66	deg	<input type="radio"/>	

Flight B397 09:51:00

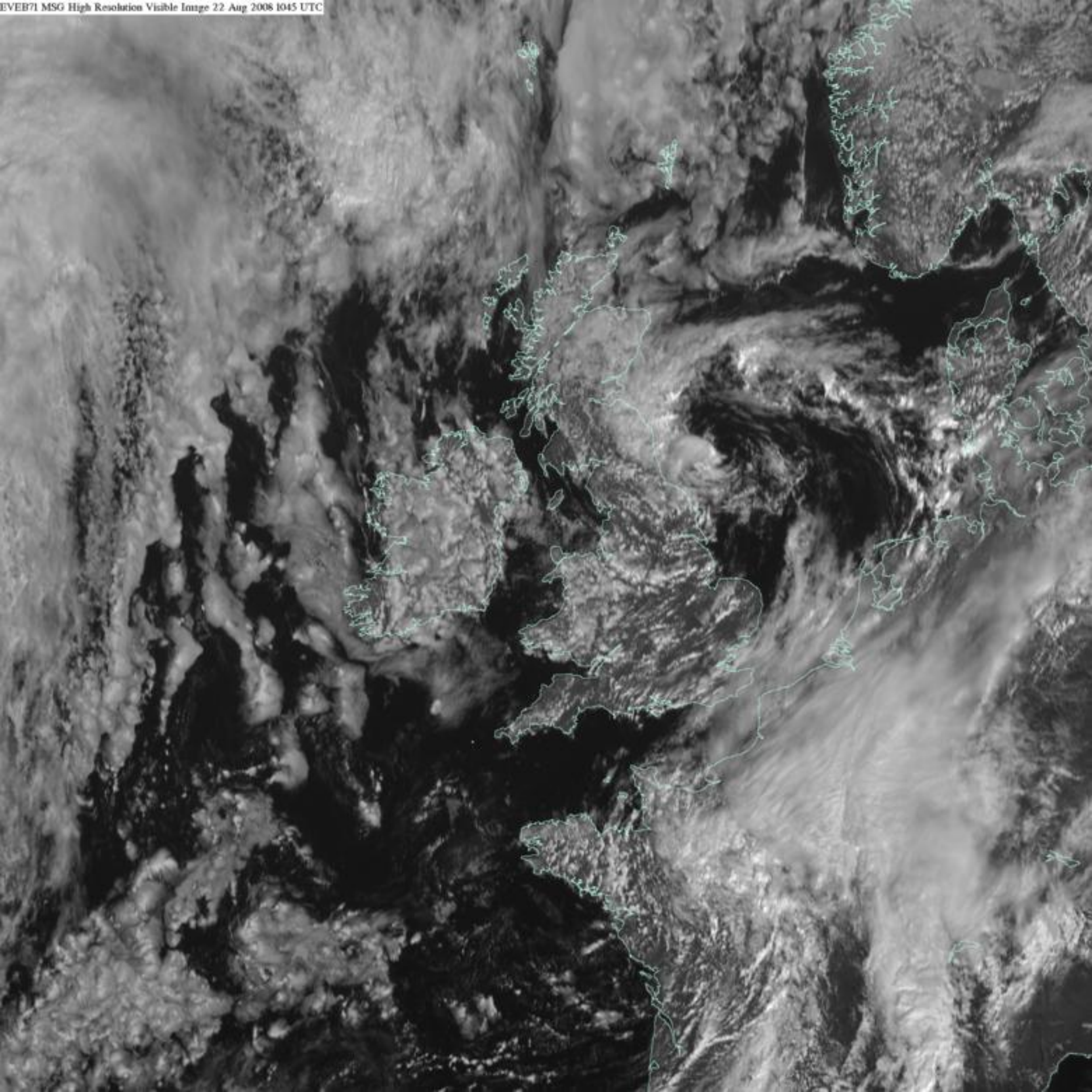
Heading 102 deg Speed 210 knots Height 2.5kft Press 924mb

Lat 50°12.0'N Long 5°12.0'W Wind 141 ms-1/ 100 deg

Temp 7.35C Dewpoint 8.29C

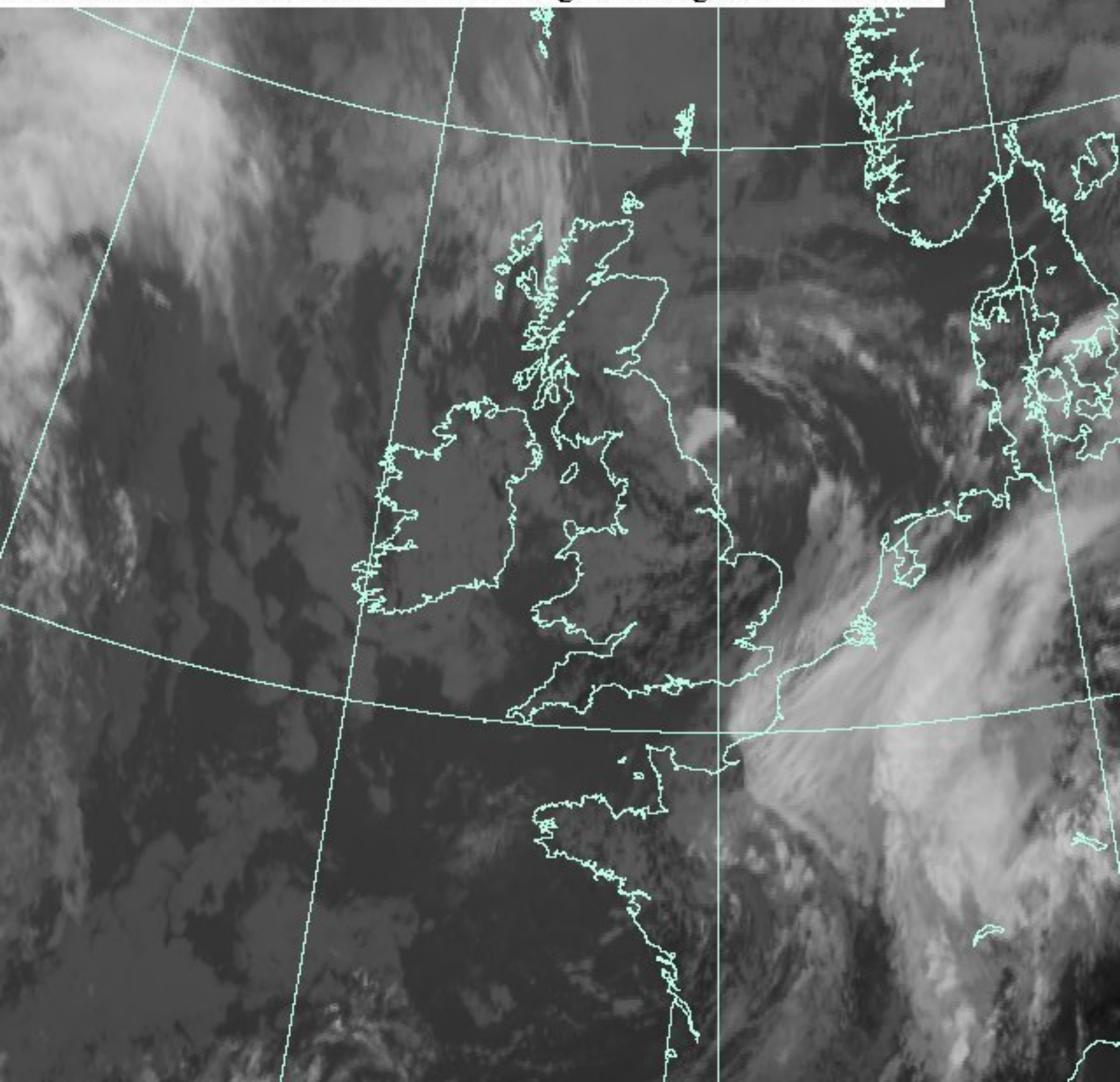
Current values		
TRUE AIR SPEED	210.07	knots
MACH NO	0.32	-
DEICED TRUE AIR TEMP	280.52	K
ANGLE OF ATTACK	5.55	deg
ANGLE OF SIDESLIP	0.9	deg
NORTHWARDS WIND COMPONENT	26.3	m s-1
EASTWARDS WIND COMPONENT	-138.55	m s-1
VERTICAL WIND COMPONENT	-109.83	m s-1
INS WIND SPEED	141.02	m s-1
INS WIND ANGLE	100.75	deg
STATIC PRESSURE	924.23	mb
PITOT STATIC PRESSURE	68.77	mb
TURB PROBE PITOT-STATIC	69.96	mb
TURB PROBE ATTACK DIFF	-0.71	mb
TURB PROBE SIDESLIP DIFF	1.91	mb
TURB PROBE ATTACK CHECK	99.11	mb
TURB PROBE SIDESLIP CHECK	110.39	mb
TURB PROBE DRY TAS	108.81	m s-1
TURB PROBE WET TAS	108.81	m s-1
TURB PROBE COR PITOT-STATIC	69.98	mb
GIN N VELOCITY	4.36	m s-1
GIN E VELOCITY	-31.44	m s-1
GIN D VELOCITY	110.07	m s-1
GIN ROLL	-0.27	deg
GIN PITCH	5.41	deg
GIN HEADING	102.47	deg
GIN RATE ABOUT LONG	114.47	deg s-1
GIN RATE ABOUT TRANS	-0.21	deg s-1
GIN RATE ABOUT DOWN	0.14	deg s-1



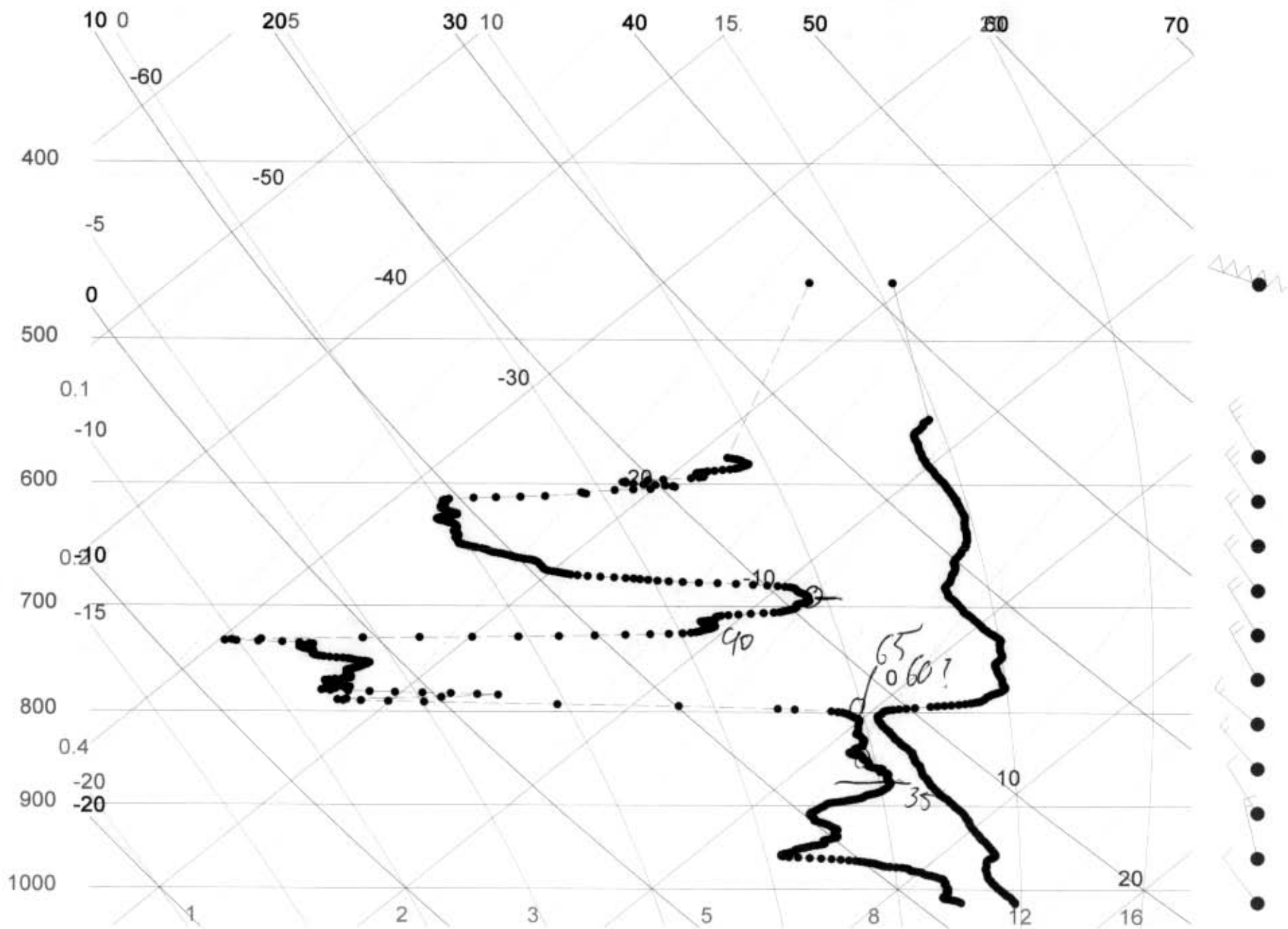




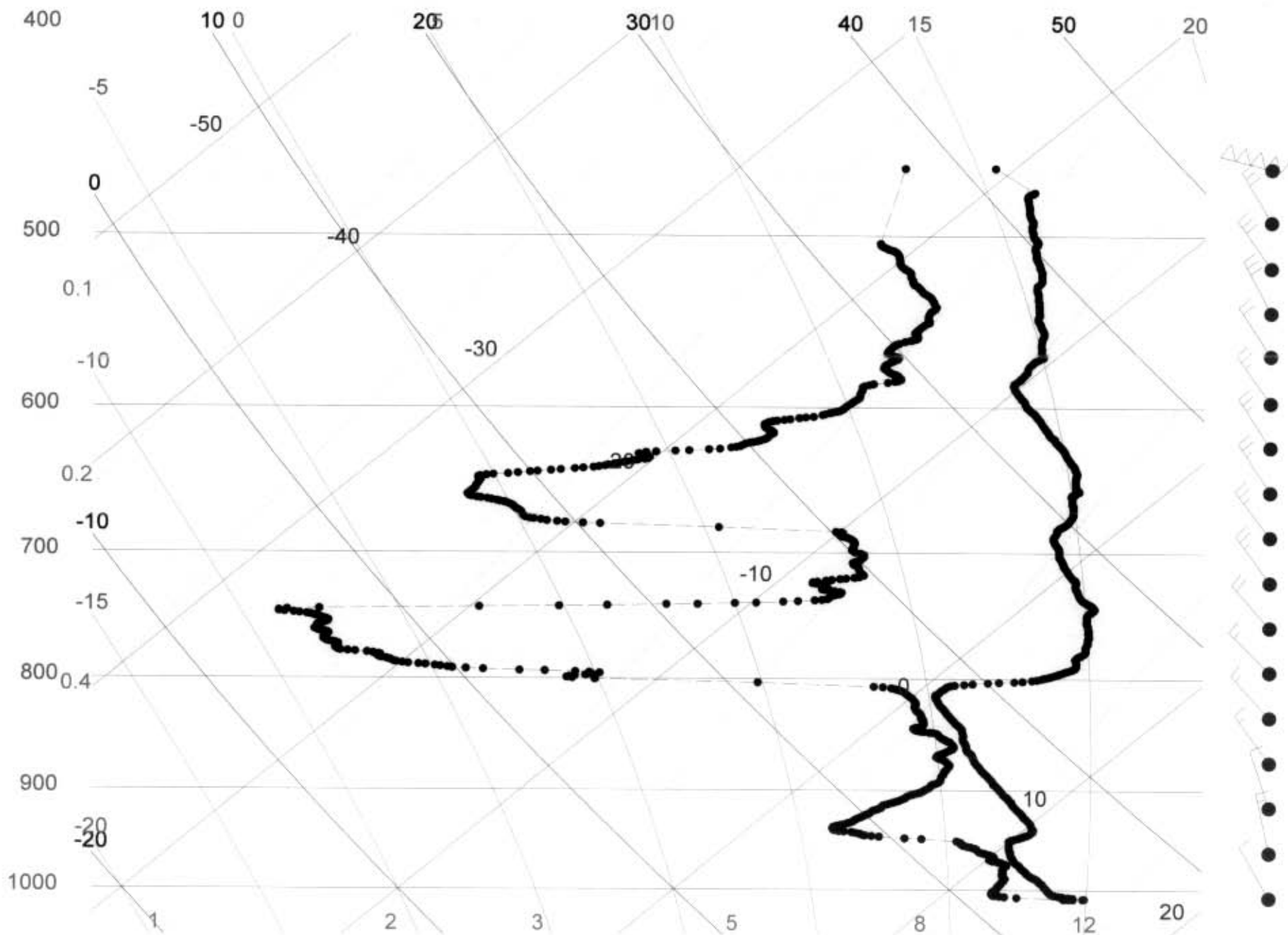
EIEB51 MSG 10.8 micron Infrared Image 22 Aug 2008 1100 UTC



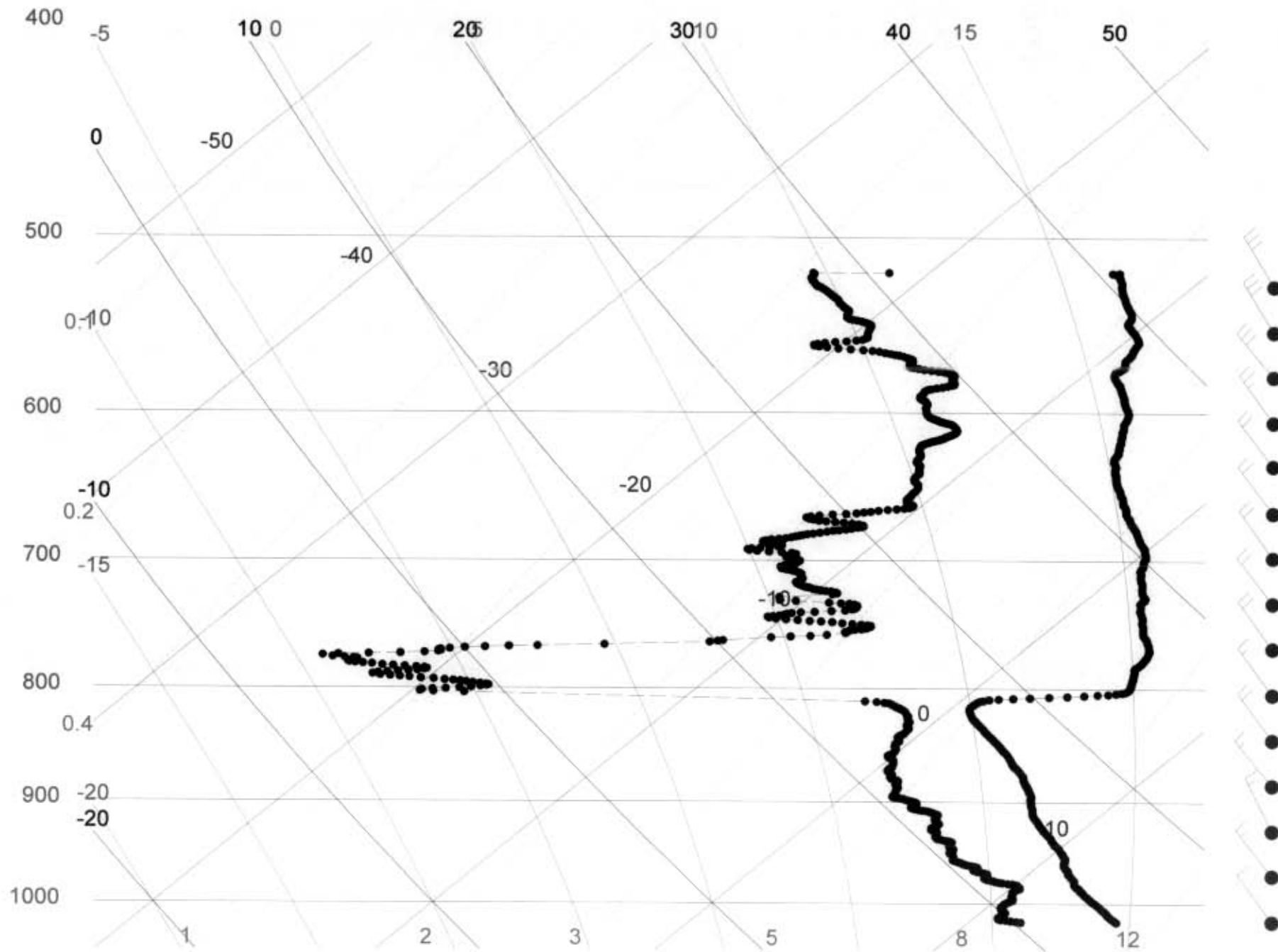
D20080822\_082116.1 074849156 none, none



D20080822\_082527.2 074869033 none, none



D20080822\_150746.1 073019075 none, none



Aspen V2.5.4, 22 Aug 2008 16:13 UTC

## MISSING LOG SHEETS:

The following log sheets are not available for flight B397:

Log	Reason
Core Chemistry / TDLAS	no In Flight log except in cases of instrument problems
FWVS log	FWVS operator does not create a log sheet
TAFTS log	TAFTS operator does not create a log sheet

## AMS - not yet fitted Document control

Revision	Date	Author	Comments
r0	11 Sep 2008	Doug Anderson	Initial version missing the above noted logs
r1	20 Dec 2007	Doug Anderson	Pre-flight log added
r2			

## VIDEO RECORDINGS:

The following video recordings in avi format should be available at the BADC :

faam-video-dfc\_faam\_20080822\_r0\_b397\_080021\_1hz.avi  
faam-video-dfc\_faam\_20080822\_r0\_b397\_090021\_1hz.avi  
faam-video-dfc\_faam\_20080822\_r0\_b397\_100021\_1hz.avi  
faam-video-dfc\_faam\_20080822\_r0\_b397\_110021\_1hz.avi  
faam-video-dfc\_faam\_20080822\_r0\_b397\_120021\_1hz.avi  
faam-video-dfc\_faam\_20080822\_r0\_b397\_134537\_1hz.avi  
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faam-video-dfc\_faam\_20080822\_r0\_b397\_164537\_1hz.avi  
faam-video-dfc\_faam\_20080822\_r0\_b397\_174537\_1hz.avi

faam-video-ufc\_faam\_20080822\_r0\_b397\_080017\_1hz.avi  
faam-video-ufc\_faam\_20080822\_r0\_b397\_090017\_1hz.avi  
faam-video-ufc\_faam\_20080822\_r0\_b397\_100017\_1hz.avi  
faam-video-ufc\_faam\_20080822\_r0\_b397\_110017\_1hz.avi  
faam-video-ufc\_faam\_20080822\_r0\_b397\_120017\_1hz.avi  
faam-video-ufc\_faam\_20080822\_r0\_b397\_134535\_1hz.avi  
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faam-video-ufc\_faam\_20080822\_r0\_b397\_154535\_1hz.avi  
faam-video-ufc\_faam\_20080822\_r0\_b397\_164535\_1hz.avi  
faam-video-ufc\_faam\_20080822\_r0\_b397\_174535\_1hz.avi

faam-video-rfc\_faam\_20080822\_r0\_b397\_091327\_1hz.avi  
faam-video-rfc\_faam\_20080822\_r0\_b397\_101327\_1hz.avi  
faam-video-rfc\_faam\_20080822\_r0\_b397\_111327\_1hz.avi  
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faam-video-rfc\_faam\_20080822\_r0\_b397\_144540\_1hz.avi  
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faam-video-rfc\_faam\_20080822\_r0\_b397\_164540\_1hz.avi  
faam-video-rfc\_faam\_20080822\_r0\_b397\_174540\_1hz.avi

No Digital8 video recordings were made on this flight.